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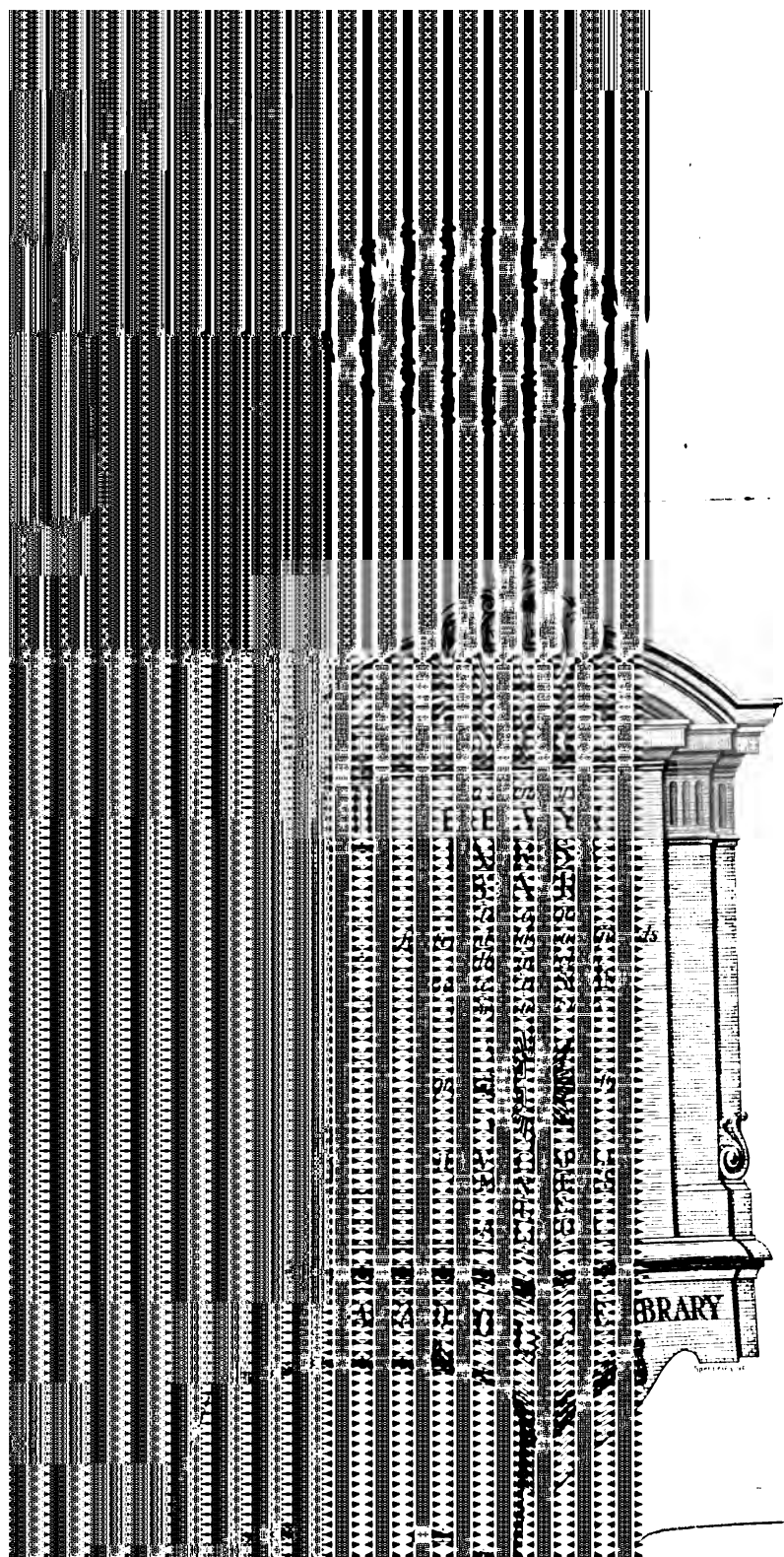
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THE ARMY AND NAVY MAGAZINE.

MAY 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 509, Vol. XI.)

The Cavalry Division.

THE army corps of recent times have not remained the only great bodies of troops employed in independent operations. The Commander-in-Chief has to reckon both with army corps and cavalry divisions. These latter, which in earlier times were only formed for actual war, are now also permanently organised in times of peace, or, at all events, temporarily constituted for the purpose of manœuvres. There is no natural numerical measure of what the strength of a cavalry division should be, as in the case of the army corps. Its strength is always the result of various conditions of organisation and of theoretical speculation. It is, like the cavalry division itself, a kind of artificial product.

The decisive moment in a cavalry engagement is the short shock at full gallop, when mere chance plays a great part. The cavalry must, accordingly, be quick at turning to advantage all the incidents of the combat; and, on the other hand, at counteracting unfavourable circumstances. The cavalry is accordingly divided into bodies (*treffen*), which engage, each supported by the other. And in this it is believed to have been discovered that three bodies, viz. a charging, a manœuvring or supporting body, and a body in reserve (ein Stoss-ein Manövrir-oder Unterstützungs-und ein Bereitschafts-Treffen) is the best measure. A single regiment of four squadrons is too small to possess the requisite weight, and three are difficult to handle. It has accordingly been decided to abide by the present arrangement; namely, to let these *treffen*

consist of brigades of two regiments, each comprising four, or, altogether, eight squadrons. The bodies must all be of equal strength, because it is impossible to determine beforehand which shall be used for the charge, which for manœuvring and supporting the other, and which must finally be held in readiness to decide the engagement or to neutralise a reverse. It is at once the essence and the advantage of the three *treffen* tactics, which are adopted by our cavalry, that no one need scruple to employ each *treffen* in the rôle properly assigned to another. Greater freedom is thus gained in turning favourable moments to account. As a rule the first *treffen* is the charge *treffen*, the second the manœuvre *treffen*. But frequently it will be seen to be directly advantageous to manœuvre with the first and to charge with the second, in order to conceal from the enemy the direction from which the latter comes. The third *treffen* will always retain its original rôle, namely, to finish off the attack, or, in case of reverse to serve as a last support.

The attachment of some artillery to the cavalry divisions, which in modern times has been rendered absolutely necessary owing to international usage, is always advantageous, not merely occasionally for opening for the cavalry passes occupied by the enemy, but also in order to prepare the way for the charge by the surprise of fire.

The cavalry divisions consist accordingly of three *treffen* of eight squadrons each, and of one or two batteries of horse-artillery.

The army corps, the infantry and cavalry divisions are important units of troops for military operations on a large scale. In earlier times it was universally believed that the army needed, in addition, an artillery reserve. In great decisive battles this reserve played about the same rôle for the field-marshal as the corps artillery in our day does for the general in command of an army corps. Besides, its employment was limited to one or two days in a whole campaign, and the trouble of dragging such a cumbersome mass of guns behind the army was not found to be worth the labour. Besides, the commander-in-chief can, during the battle, form a large line of artillery, at will, of the corps artillery of several army corps. If they have been planted behind the front, to support a final charge, the employment of their corps artillery, as a reserve of guns, is the sole means of making use of the abundant and still available supply of artillery. The other divisions in the army are of less importance. Whether the infantry division falls into two brigades of six and four regiments, each three battalions strong, or only into three regiments, each consisting of four battalions, does not make any very material difference. To me the latter seems to be the more practical ; peace

considerations necessitate, in Germany, the arrangement at present obtaining.

It might, perhaps, be of interest to discover the natural size of the smallest units of troops. In the case of the infantry, it has been hitherto considered right to adopt such a measure of numbers as a man could under any given circumstances control by his voice. It thus appeared that a battalion of 1,000 men was the smallest available. The company was regarded as an indefinite body, formed for purposes of training merely, and for small administrative matters, and not for action. We may regard this point also as of paramount importance; namely, what body of troops can show itself *en masse* on the field without running the risk of being immediately annihilated by fire. As a rule it is allowed that the battalion offers too large a mark, and that it must, therefore, as soon as it comes within the range of the enemy's fire, be split up into its companies. And thus it is seen that, strictly speaking, the battalion can no longer be regarded as the smallest unit of infantry; the company of 250 men has now come to be regarded as such. But the number of companies in an army corps is too large. It is impossible to deal with 100 companies—at all events much more difficult than with twenty-five battalions. Even the colonel commanding the regiment, were the battalions to be dispensed with, would experience the difficulty of having to control twelve distinct companies. It is accordingly practicable to retain the battalions, and to regard them still as the unit, although it will be plain to everyone that they are really only there for the purpose of simplifying the command and the movements of great masses.

In the case of the cavalry, the squadron of about 150 troopers is the smallest unit, a number based upon experience; 150 horses and the same number of riders can be rapidly inspected in the smallest detail by a single commander.

About the same number is here adopted as that which the country farmer in North Germany considers feasible to keep on a single farm. If his business increases so that more than 150 men and a like number of horses and plough-oxen become necessary, they are distributed among outlying farms.

In like manner the strength of the battery of six guns has, by practical experience, been discovered to be the proper indivisible unit for the artillery; whilst in old times the strength varied between six and twelve guns, and in still earlier times—for instance, during the Seven Years War—the batteries were made up by the “park” to any required strength.

Battalions of 1,000 men, squadrons of 150 horse, and batteries of six guns form, accordingly, in Germany, the smallest bodies of troops; the army corps with its two divisions, a Jäger battalion, and the corps artillery, numbers 25,000 infantry, 1,200 horse, and 84 to 96 guns. If the staff and the engineers and gunners are reckoned, we may in round numbers, as we have before mentioned, set down the whole army corps at 30,000 men of all arms.*

The cavalry division of three brigades of eight squadrons each and two horse batteries numbers 3,600 horsemen, with twelve guns.

In the case of troops that do not belong to the "field" army, it is permissible to organise the larger corps for active service as they are wanted. For the first reserve, the great bodies, such as the active army has, are most suitable; they are formed into divisions, or, it may be, into army corps. In the case of garrison troops, this will be only practicable where a considerable number are employed upon the same duty; as, for instance, the guarding of a district, a great centre, a fortress, a coast, &c. It will, moreover, be advisable to give the smaller bodies an independent existence, because, though combined in large groups, they must, in actual practice, be immediately broken up and detached from each other.

So much for the organisation and division of our armies.

The Officers.

"The soul of the Prussian army is in its officers." This saying of Rüchel may, at the time it was delivered, have been mocked at on account of its somewhat ludicrous form. But its sense is excellent. The corps of officers speaks for the condition of the whole army. There is here repeated what is universally observed in political life. So long as the educated, leading classes maintain their position, the people remains serviceable and strong. On the other hand, the decay of the ruling classes of society entails the decay of the whole nation, except it be that a great social revolution abolishes the former, and replaces them by others; this may for a time cause a check, but never affords a permanent remedy. In the fate of the Turks of the present day, we may perceive what lot is in store for an honourable, proud, and religious people when deprived of the leadership of the upper classes. The best possible troops under bad officers are at best but a very deficient body. The corps of officers must accordingly be chosen from the best classes of the people, who exercise even in ordinary life a

* The Appendix contains the normal constitution of the mobilised army corps and of its column of march, together with the explanation of details.

natural authority over the masses. Frederick the Great, the founder of the Prussian officer-corps, selected it entirely from the hereditary nobility, which at that time almost exclusively represented the educated part of the nation. When this became altered, the character of the corps of officers became changed. Though the officers are even to-day chosen from the aristocracy of the people, yet this means the aristocracy of education, which has taken the lead in social and political life. An especial value is, and is rightly, laid upon education, because it is the basis of noble and moral qualities. But we ought not to cling exclusively to scientific education, but pay also proper regard to the qualities of the heart and character. It is required of an officer that, in the interest of his service, he should forego personal advantage, lucre, and prosperity. Hence only such fractions of the population as are not, by reason of their vocation, compelled to prefer personal advantage to great and public ends, are fitting persons to recruit the corps of officers. Sons are, by their father's example, here educated up to the feeling of duty. Egotism is beyond all doubt the most bitter enemy of the qualities essential to the officer-corps, and every occupation which is calculated to increase the former is an enemy of the latter. It was, therefore, very practical to give the officer-corps the character of a class, each member of which is socially the equal of another, a class having common interests, and at the same time common duties, and of which the whole body is rendered responsible for each individual member. Thus the officer-corps has a certain character, reminding us of the Orders in the heyday of their existence. It must appear as a real chivalry.

An ideal trait must be peculiar to its whole nature, otherwise it is incapable of fulfilling its proper ends. Let us picture to ourselves in what those consist. In the most trying situation which is possible in life—namely, in the face of death—it is called upon to lead a mass of men, and still preserve its influence over them. To do this, invaluable qualities are demanded, such as cannot, in the case of such a large number as compose the officer-corps, be innate in every case, but which may in great measure be gained by education, and especially by continuous intercourse with the best men of the nation. And this is only rendered possible by the institution of a special class.

Influence over the soldiers must be gained in time of peace by a proper application of the superior qualities of intellect and character, in training and leading them. Before all else, this must also include care for the well-being of the soldier. A decay

in the officer-corps and its influence arises, so soon as officers begin not to trouble themselves more about the private soldier and to confine themselves merely to giving orders. When their authority over their troops can only be enforced by noise, it is as a rule but feeble. The worse the discipline in an army is, the more despotic a form it assumes. Besides this influence that has been gained, example is requisite, and this is more the case in time of war than in peace. The officer must not spare his life. Merely in order to urge on his troops, he must frequently expose himself more than the ends of battle would otherwise at the moment demand. By thus showing himself unusually fearless and self-sacrificing, he awakens noble impulses in the soldier's breast, for only by these can great deeds be done. To the officer-class there is, accordingly, due of internal necessity, a more favoured position in the state. *Noblesse oblige*. He who is accustomed to regard himself as belonging to a special class will also, in war, consider himself bound to do something special. But he who, on the other hand, always lives in an inferior and subordinate position, will only in few cases feel himself impelled to suddenly distinguish himself. Slaves are always cowards. But the slavery of an inferior state of life is no less depressing than any other. It deprives a man of pride, which is as indispensable to an officer as is his daily bread, to enable him under the trying circumstances of active service to show his authority.

The social advantages which are conceded to his class are a profitably invested capital. Even the prejudices which the officer entertains sometimes, in his youthful years, owing to more honour being paid to him than to others of his age, bring in good interest on the field of battle to the profit of the Fatherland. His duty is to command and to lead, and he must therefore feel what he is, and be proud of his position; and there is no harm done if he is somewhat more puffed up with a sense of his own importance than would, under other circumstances, be absolutely necessary.

Now, if the officer must further forego the acquisition of a fortune, or even domestic comfort, and risk the future welfare of his family, which is assured the landowner, the merchant, and the tradesman, it appears only right and fair that he should be compensated for foregoing these advantages by outward distinctions. And it is just these latter that most frequently earn for the officer class the envy of others, and yet we must not forget that these are only a just, or even a modest, compensation for great sacrifices. Of no other class is it officially demanded that it shall be at all

times ready to sacrifice its life. The illustrious Decken eighty years since expressed himself in very clear language upon the position of the officer-corps in the State.

"Egotism has passed from individuals into whole classes," says he; "one class esteems another only in proportion to the advantages which it can derive from it, or only in so far as it recognizes in the other a similarity of character and an immediate common struggle towards one and the same end. The sovereign in a monarchical state favours the nobility because he can depend upon its immediate support. In a commercial country, the merchant is held in the highest esteem, and, after his own vocation, he considers navigation to be the most honourable trade. Personal interest, shaped according to various needs, is the measure of the value the business and dealings of one class have in the eyes of others.

"The literary man loathes war, because the muses take to flight on hearing the din of arms. The statesman trembles when he counts up the enormous expense caused by the military class. The civil bureaucracy is jealous of the power it must surrender into the hands of the military authorities, and often treats the soldiers like citizens who belong to another State. The moralist is vexed at the gay life the officers lead, whilst the dandy envys him his fine dress and his sword; and the countryman cannot pardon the soldier for enlisting his sons and servants. But in case it has happened that anyone has ever been so unfortunate as to incur our displeasure, we are on the whole very much inclined to remark all his failings, even the most insignificant, which before would not have roused our attention, and to quite overlook all his merits. If we have once taken a dislike to a class, every occasion tending to intensify this feeling must be regarded as a fresh tributary by which the brook swells at last into a boundless river. Now, when in consequence of a long peace the memories of past services have become completely obliterated, and there is no immediate prospect of a war, the citizens take more and more note of the grievances which are inseparable from an army, and attempt to convince themselves of the uselessness of this institution, adducing in support of their assertions many specious proofs." The present day, especially in Germany, is favourable in this respect to the officer class. Great and successful wars have enhanced its renown, and have moderated the envy of others. But there will come again periods of a long peace, in which it may again be necessary to remind the people that external favours may, without harm, be extended to the military, and especially to the officer class, and that they may even be profitable. An officer class of inferior social position may

consist of excellent, peaceable, and industrious citizens, but it will be poor in bold and courageous soldiers. Without social privileges, the class must of necessity soon sink down to a very modest *niveau*; for in civil life it is property that determines social grades, and our officers are—thank God!—in the majority of cases, as poor as church mice.

The officer should, moreover, preserve his youthful vigour to a comparatively old age. It is his province to stake in war, and upon its uncertain chances, woe and weal, life and reputation. And for this is essential, in addition to military qualities, a light heart, that readily hopes and does not look at the black side of things. But this light-heartedness will be but with difficulty preserved by anyone who has been oppressed by a long life of care. An existence free from care—yet no more than this—should be secured to officers by the State in its own interest. Officers who secretly eke out a miserable existence and are always looking forward to the moment when, freed from the burden of splendid misery, they will be enabled to live in some quiet nook on a moderate pension—officers of this description are of no service to the army and their country.

How can such persons be animated by fresh and courageous impulses indispensable to a leader in battle? The preservation of physical activity must also be considered. It is not a little that is demanded of a man and father of a family of fifty to sixty years of age, when he is required to dash fearlessly in the teeth of the enemy's guns, at the head of his squadrons, and ride furiously over hedge and ditch. Let anyone demand this of one of our sleek merchants, of a comfortable squire, of manufacturers and private gentlemen, of a like age, and we shall find there will be only very few that will not refuse this demand upon them as being an act of madness, quite ill-suited to their years.

A portion of youth's dashing recklessness must be preserved by the officer until the end of his career, and he will only be able to do this if his position guarantees him some freedom from the ordinary pressure of everyday life. An aristocratic trait must pervade his whole nature.

If the Fatherland secures its officers an honoured and self-sufficient position, it obeys the dictates of shrewdness and self-preservation. More depends upon the energy and excellence of this class than of any other; to wit, the honour and liberty of the whole nation.

Important for all great European armies of the present is, also, the class of Reserve officers, who only leave their civil occupations

when war summons them to the standard, or when manœuvres require their co-operation. The name is different in the various armies. The essential point remains the same.

No State is sufficiently wealthy to be able to afford a corps composed exclusively of officers of the line, of such numbers as to suffice, in time of war, for the whole army when increased to twice and thrice its strength by mobilisation. In Germany we should meet with this difficulty, that the barriers of the professions and classes which are suited for supplying the material for our corps of officers would have to be broken through.

Not even the active army proper can be entirely commanded by officers of the Line. The formation of the many new staffs that a state of mobilisation renders necessary, almost exclusively absorbs the real active officers. It is impossible to avoid many companies of the line being in the hands of officers of the Reserve immediately after the first bloody battles. At the end of the war 1870-1871, even lance-sergeants (*vice-feldwebel*), in many cases, took the command of companies. In December 1870 we find a Bavarian infantry division so reduced by severe losses that it only possessed in the front a single captain of the Line.

Involuntarily we ask ourselves what would have ensued had the war dragged on through one or two years more. We are led to the conviction that, given a state of similar circumstances in the future, a moment must come in which only the higher commands will, as a rule, be in the hands of active or regular officers, whilst the lower will have passed into the hands of the officers of the Reserve and the Landwehr.

But, in the course of a great war, it may very well be that the necessity arrives for the formation of new bodies of troops, in order to replace losses or to counterbalance the numbers of the enemy. The supply of line officers will have been long since exhausted before such a crisis is reached. Only the Reserve can possibly supply the leaders. Upon the capacity of this class depends, then, the eventual success, for only he who has good leaders finds also good soldiers.

The importance of this institution cannot, therefore, be called in question. It is necessary, however, that the conviction that this is the case should be yet more widely spread.

It is not everyone who has the inclination and talent for being a professional officer in time of peace. Every capable man belonging to good society should, however, conceive it to be his duty so to prepare himself as to be able, when necessity demands, to enter the army as a substitute when professional officers are wanting.

In time of war all the conditions of service are simpler. The duties of the active officer can certainly, with few exceptions, be undertaken by every educated man who is healthy and strong, provided he has only a firm will. And this he will have, if he only estimate the gravity of the situation aright. The attainment of an officer's commission in the Reserve must not be regarded as an act which must take place *honoris causa*. The practical importance of the step, and the ideal value of it as well, deserve to be especially insisted upon.

Even in time of peace, the officers of the Reserve have important duties to perform. They stand with one foot in the military system, of the material working of which they understand much more than the private soldier, and with the other foot among the people. On this account they are especially capable of extending and keeping alive in wider spheres attachment to, and understanding for, the profession of arms. They can be energetic representatives of all the interests of the army.

Germany possesses, beyond all doubt, the best material for an extensive and efficient body of Reserve officers. It has, moreover, good tradition in its favour. Strictly speaking, everyone in Germany passes through a period of life when he would like to be a soldier. The farmer, the manufacturer, the lawyer, the official, and so on, all of whom, owing to circumstances, have been launched into other careers, endeavour, at all events in the Reserve and Landwehr, to satisfy their old cravings. With passion they throw themselves, from time to time, into the noble handicraft of arms. It is a real blessing for the Fatherland that such is the case. If it is decreed that some day it shall be opposed to several enemies in one gigantic struggle, it will find its safety in this fact, that it will not lack genuine active officers. It will be continually enabled to put fresh troops in the field, whilst its enemies will only be able to drum together masses of men.

It may appear unjust that we do not demand like privileges and provision for the under-officers and the soldiers as for the officer. But there is a material difference here, namely, that they only temporarily belong to the army. Their military profession is not, as in the case of the officer, their sole worldly goods. Besides this, they perform their duties in early years, when care is, at present, far removed. The hope of gain and a future free from care beckons to the soldier in civil life, after he has discharged his short period of service with the colours. The under-officer counts upon the prospect of gaining a permanent situation through his service in the army, a prospect that otherwise would have been closed to him.

Plentiful provision will also certainly be advantageous to the rank and file. The private soldier must not suffer want, and must not, in comparing his lot with that of his equals in civil life, draw a conclusion unfavourable to himself. Contentment is no unimportant factor in the internal efficiency of an army. It results from a proper proportion of work and comfort. Spoiled Pretorians will do their duty as badly as overworked and hungry troops. Pride in his rank, pleasure in and attachment to the cause he serves, must also come to the soldier, from the way in which he is maintained and treated.

Before all, he must know that, in case of being wounded and taken ill, he will not be abandoned to distress, and that his relations, whose bread-winner he has been, will be provided for, should he die on service. Thereout there springs a feeling of security, productive of courage and vigour.

In the army, under-officers and soldiers change after short periods. The officer-corps alone forms the nucleus. It hands down traditions. Through its hands passes, year by year, a new class of recruits. The whole nation in arms is subordinated to its influence. The alterations that great thinkers and great eras have wrought in the army can only be passed on to future generations through the medium of the officers. As the officers so the army. More true to-day than when it was spoken is Rüchel's saying, "The spirit animating the officer-corps is the spirit of the army."

II.—OF THE COMMAND OF THE ARMIES.

1.—*Generalship.*

All that is to be said about the command of the armies and of generalship, might consistently follow a discussion of the evolutions of the army and the battle. But as much of it is intimately connected with what has been already urged touching the officer-corps, its place shall be here.

History gives us a great idea of the importance of generalship. We see the Macedonians victorious over enemies of tenfold their strength, and do not doubt that they would have succumbed, had another than Alexander been at the head of the army. Hannibal taught the Carthaginians for a certain period to vanquish the first military people in the world. Only a Cæsar's genius could triumph at Alesia, Pharsalia, and Alexandria. Frederick withstood the world, even when the trained soldiers, with which he first took the field, had long since lain dead on the battle-fields, or were lying wounded in the hospitals, and he was compelled to take all

he could possibly summon round his hard-pressed standards. The French of Rossbach marched victorious through Europe, when led by a Napoleon. Great generals can even surround the arms of subjugated and decaying nations with a fresh halo of glory, as is proved by the instance of Aristomenes, Belisarius, Narses, and Aëtius. Even the decaying Persian power, towards the end of the last century, undertook great wars of conquest, and advanced as far as Delhi, when Nadir Schah had raised himself up to be its ruler.

With the death or retirement of a great general the warlike renown of his country often departed. When Alcibiades no longer led the Athenians, their armies were annihilated. Carthage was soon doomed after Hannibal had left it without assistance. The hordes of the Mongolian world-devourers were easily overcome when no longer led by Ghenghis Khan and Timurlenk; and the terror of the Turkish arms became extinct with the line of the Great Sultans. When Turenne died, in the middle of a successful campaign, his successors were within an ace of a total defeat, and, as it was, they were only able to save the army that had until then been victorious, by retreating across the Rhine. "Surprise is felt," wrote Frederick the Great, in his history of his times, "that the close of Charles VI.'s reign is found to be so much below its glorious beginning. The cause of this must be sought solely in the death of Prince Eugene. After the death of this great man no one was found to replace him." Still more striking is it to perceive how, in 1813 and 1814, the French were, almost without exception, defeated where Napoleon was not present; but, as a rule, were victorious so soon as the Emperor was again at their head.

After these historical experiences, it is possible to arrive at the conviction that but little depended upon the nature of the army, but that everything depended upon the genius of the general. As a fact, even in these days, the ability of the commander-in-chief may be regarded as the most important condition of victory. In the wars of the future, too, the power of a man of genius will always make itself felt. Yet things have altered in comparison with earlier times. In our day, special qualities are indispensable, in order that the ladder of the military hierarchy may be ascended up to the height where the eminent talents of a strategist first become of value and are perceived. We are right in saying that it is character that makes the general. But strong characters are wont to display themselves in a manner that is more disadvantageous than profitable to their advancement in time of peace.

Had it not been for the French Revolution, Bonaparte and Carnot would in all probability have ended as lieutenant-colonels or colonels. And Frederick the Great would, beyond all doubt, had he not been born a prince, have retired as lieutenant. Adolph Schmidt proves, in an historical parallel, that even the Crown Prince Frederick, had his father caused him to be executed after his unsuccessful attempt to escape in 1729, would most certainly have been held to have been an obstinate, malicious, "effeminate" or weak-minded good-for-nothing, who never did anything for love of it, had no turn for anything, and was of no use—in short, was in everything the reverse of his wise and pious father.

Great generals could, accordingly, only rise up independently of the circumstances which surrounded them, so long as the armies were more or less free levies of the people, and original natural tendencies prevailed in all appertaining to them. Under such circumstances, energy and personal influence find the widest sphere of action. It disappears in a settled and orderly state of civilisation. Nadir Shah would, in our Germany of the present day, be undergoing penal servitude, for he began his career as a brigand-captain.

The excellence of the troops now stands in a more intimate relation to the excellence of their generals than was the case in former days. Only where a healthy state of things prevails in an army, are good generals to be found at the head of it. The way of these latter is barred so soon as favouritism, oblique, and partisanship enter, or subservience is more highly esteemed than sincerity and force of conviction.

The legend of the brave armies which were only defeated because they possessed incompetent leaders, is capable in these days of being greatly restricted. How is it possible for bad generals to train good troops? or how, on the other hand, should those men, who have known how to drill and form an efficient army in time of peace, fail in time of war? Genius makes an exception, in so far that it knows how to compass great achievements with means that are insufficient for other mortals. But, as a rule, good armies and good generalship may be regarded as inseparables.

We must accordingly not merely examine what qualities a man needs in these days in order to achieve great things as a general, but also what conditions must be fulfilled in an army in order to render it possible for great soldiers to rise up.

The general must, in hours of danger, sway the masses to per-

form his will. He must, therefore, be born more to rule men than to please them. Those who have been born to rule are also great soldiers; and it is easy to conceive that the greatest military leaders must be looked for on thrones.

Sway over others is before all else founded upon the will. It is seen in the case of boys at play, how that the one who knows how to give the most definite expression to his will leads the whole band. Some of his fellows give in to him for convenience sake, others out of a want of confidence in their own strength. In later life the same thing is repeated. A demand made with determination seldom meets with opposition. Such a claim has something impressive in it, and the great masses of mankind must be impressed if they are to obey. They thereby attain a sense of personal security. This enhances their courage and capacity.

It is impossible to conceive of a strong will apart from self-confidence. This latter again presupposes a certain onesidedness. And this advantages the soldier. Highly intellectual natures readily adopt a universal theory, which is prejudicial to successes within the narrow sphere of active service. They penetrate too deeply, as a rule, into the true nature of things, and discern more sharply than others risks and dangers. Then follows doubt, that destroyer of self-confidence, and that arch-foe of all success. In the many-headed council of war, held on the 5th October 1806 in the Prussian head-quarters at Erfurt, Scharnhorst delivered that memorable saying, that in war it matters not so much what is done, as that what is done is done with proper unity and strength. His warning was not attended to, and, although there was there no lack of shrewd heads, only paltry measures were adopted. Clever men usually look too much about them for the *best* method, and fail to see that the chief matter of all is to adopt betimes a *practical* method. How intelligence, which in time of peace enjoys the greatest consideration, decreases in value in times of war, when opposed to will, is seen in the result of almost every council of war.* Certain it is that where experienced and shrewd men meet together, the highest order of intelligence is collected. Yet Frederick was right in preremptorily forbidding his generals to hold a council of war. That clever discernor of men knew full well that the only result ever thereby attained is a majority for the

* In time of peace, when the will and courage are subjected to the responsibility of fewer trials than in time of war, the worth of an officer is, as a rule, exclusively determined by his intelligence, whilst this last guarantees success in war to a far less degree. Hence the frequent disappointments in the persons of generals who have in peace time been prematurely promised a great future, and upon whom sure hopes have been unwarrantably based.

"timid party." The intelligence concentrated in a council of war is wont to be productive of no other advantage but this—that there all the weak points of an army are carefully brought out, and proofs adduced to show how dangerous all action in the field is. By this, the will of the general becomes only still more disquieted and weakened, and a "council of war" has become an ominous word, the sound of which, as a rule, is equivalent to capitulation or defeat. It is always born of the presentiment of approaching disaster, and of the wish of the commander-in-chief to share the responsibility with others. It is not clever men that are as much needed, as men of strong will, full of self-confidence.

A strong will is, indeed, a proud possession, but yet not a very agreeable one. It entails upon its possessor an unusually great amount of responsibility.

The courage of responsibility, and the wish to bear it, are necessary to a general, but are rare gifts. Very many men dash thoughtlessly into the gravest perils, when another has to bear the responsibility for them; but they are irresolute when they have to undertake it themselves. To draw this responsibility upon their shoulders may, in an unfortunate case, be equivalent to loading themselves with blame. The great men in war behave like children who, when they have done any mischief, are the first to exclaim, "That is your doing!" When their eye scans the field of corpses, there is no consciousness that is dearer to their hearts than this, "It is not my fault." It is one of the bitter secrets of human nature, that it is more afraid of the fault than of the consequences of a misfortune. The poet who brought the accusation against the heavenly powers—

Ihr lasst den Armen schuldig werden,
Dan-nüberlasst Ihr ihm der Pein—

well discerned the secrets of our hearts. The courage of responsibility is, all the same, a glorious gift of Heaven, by which alone a high-placed general can achieve great results; for, if his experience and intelligence are not sufficient, he finds shrewd helpers to supply his deficiency.

The courage of responsibility is born of a certain magnanimity which must be inherent in the general, and which ennoble his whole nature. It is a feeling of superiority that raises him above the common herd, *without making him presumptuous*. It may be innate, but may be also generated in the school of life. Severe trials purify a well-framed character. They teach it to think little of earthly weal and woe, to gaze dauntlessly into the face of possibility, to suffer fresh disaster; it teaches men to bear the blame

of guilt when innocent, and to fall a victim to the damning sentence of the mob, and the displeasure and hatred of princes. A versatile and thorough knowledge may produce this nobleness of soul. It certainly makes us perceive how shortsighted at best human perspicuity is ; but, on the other hand, it teaches that war presents us with no enigmas incapable of solution, but that the employment of the natural powers of the understanding is all that is needed. Nowhere, in the whole system of warfare, is there any dark corner which the magician's art can alone enlighten. Knowledge enhances security, whilst ignorance is the beginning of a moral dissolution. The feeling that all that is required is to be able to use properly the materials given, and then, at most, to fight with misfortune, steels self-confidence. It tells us, "What others can do you can do also," and increases the pleasure of ruling and leading.

Now whether this nobleness of soul be a natural talent, or whether it be acquired by education or in the school of experience, it is that quality that soldiers most highly esteem in their general. It is a guarantee against the unwelcome effects upon them of danger and disaster. It gives that calm tranquillity upon which excitement breaks as upon a rock in the sea ; it produces an even balance of mind, from which a comforting effect, like an electric current, spreads over the whole army.

"A strong mind is not such as alone is capable of strong emotions, but such as preserves its equilibrium when worked upon by strong emotions, so that, in spite of all storms in the breast, the understanding and conviction keep their place, like the needle of the compass on the tempest-tossed ship."

Courage of responsibility and nobleness of temperament are more necessary to the generals of our times than they ever were. The reason for this lies in the increasing dimensions of the armies, and in their constant independence of each other on the battlefield. The uncertainty of subordinate commanders must, of necessity, be increased, because it is more and more difficult for them, from their point of view, to oversee the state of the whole operations. On the other side, the possibility of the whole being controlled from the central command is proportionately diminished. The commander-in-chief thus comes more frequently into the position of being obliged to accept the responsibility for events, the course of which he is unable to control. Relying on uncertain news, or short telegraphic reports, he must, without being personally able to discern the position of affairs on the spot, command operations to be attempted which, perhaps, after much blood has

been shed, fail in their object. He then is made responsible, and upon him reproaches are showered.

In the Franco-German war, such orders were despatched from Versailles to Lisaine, to the Loire and the North. They were successful, but chance circumstances might have caused them to end in disaster. The general must be aware that, even whilst devoting the most careful consideration to the matter, he is playing a dangerous game, upon which he stakes his reputation, his safety and, it may be, his life as well. The French general who empowered his subordinates, in all doubtful cases where they could not ask for orders to attack, to presuppose them, in order to be quit of personal responsibility, was well acquainted with war and with human nature.

Until the modern weapons of precision were invented, battle-fields were about as large as a manœuvring-ground of a brigade. Even those who visit the battle-fields of 1864 are astonished to find how short all the distances are, and how close together the several objects which are detailed in the accounts lie. From friend to foe at Missunde, Oberselk, and Oeversee, it looks, according to our notions, only a stone's throw. The visitor to Waterloo and Hochkirch will be still more impressed by this. The dimensions of modern battles were unknown in those days. Thus the possibility of unexpected and colliding influences on the part of subordinates was more limited. Before the battle, an army formerly advanced to within a distance of the enemy that, in these days, would be equivalent to standing under hot fire. The general, before making his decision and completing his arrangements, could himself see how matters stood. Frederick severely reproached himself for not having previously surveyed, in person, all the ground over which his attack led him at Kolin. Whoever would do that in the wars of modern times would always be behindhand with his arrangements. Frederick and Napoleon followed the movements of all their troops until the moment arrived for them to engage in the battle. But the great King was, as a rule, only at the head of 30,000 to 50,000 men. Napoleon commanded vast hosts, but they were closely packed together in dense columns.

In these days it is seldom possible to find a point of view whence the whole battle-field could be surveyed. At all events, it is too extensive for it to be possible to make personal dispositions of the troops forming the wings. The orders carried by a fast orderly often take so much time in transit, that the circumstances under which they were issued have, in the meantime, completely changed. Intelligence and messages from distant parts of the

battle-field arrive in a confused state, and are contradictory. The general, accordingly, must act on hearsay, and this requires more courage of responsibility than was required fifty or a hundred years ago. Only a strong self-consciousness will be able to acquit itself well.

The truest friend and helper of the will is ambition. A vigorous ambition is indispensable to a general. Men of very strong will and good qualities remain sometimes unknown, because they lack the inner impulse to shine forth, to be the first, and to "outstrip others." Some have been only induced, almost forced, by chance events to unfold their talents. Cromwell and Washington are examples of these. But ambition has wrongly become discredited, because it is so frequently confused with an impulse that strives after external advantage, and is thus falsely styled ambition. Genuine ambition is an expression of the natural desire, innate in every man, to prolong his existence beyond the pale of death, to snatch an immortal part of his existence from annihilation. Without this active helper, the will, even though it assert itself energetically at first, is readily exposed to the danger of gradual extinction. It is easy to understand that men of talent, after showing at first great promise, disappear afterwards in the gloom of obscurity. We must not, in such cases, always think of their talents as exhausted. Either a faulty philosophy taught them in process of time to scorn glory and greatness, or they allow their yearning after fresh laurels to be destroyed by the envy of their companions-in-arms; or, it may be, by the want of incitement engendered of easy successes. But all this is prevented by an intense ambition which keeps the will in motion like the flywheel of a machine. Great deeds are impossible without ambition. It is nearest allied to love of glory, which unceasingly bids us rescue our name from historical oblivion, and thus to accomplish extraordinary achievements. Love of glory was Frederick's mainspring when he marched out to conquer Silesia, and to open to his Fatherland a new line of development.

The general undergoes his hardest trials in the days of disaster. He must possess the special gift of being able to bear disappointments and the buffetings of fate of whatever kind they may be. There are characters, vigorous in other respects, which lose their tranquillity, their presence of mind, and their patience when their hopes have been dashed to the ground. We characterise that quality which is especially successful in combating the impression of misfortune, as "greatness of soul," and add this quality to those representing our ideal of a general.

Thus it follows that a number of great human qualities are identical with great military qualities. Among the other gifts that are indispensable to a general, it appears only necessary for us to bring into prominence those about which something special remains to be said. For we must take it at the outset to be self-understood that he cannot exist without circumspection, courage, boldness, enterprise, foresight, discernment, perseverance, hope, &c.; for every good soldier must possess these qualities.

Very essential to a general is a thorough knowledge of the secrets of human nature. An army is a very sensitive body; it is no dead weapon, a mass of chessmen to be moved backwards and forwards according to a preconceived arrangement, until the enemy is check-mated. An army is subject to numerous psychological influences, and its value varies according to its general feeling. Disaster depresses its courage and its confidence; any advantage, though trivial in itself, animates its hopes and strengthens its discipline. The same troops are not to be recognised at different times, so differently do they comport themselves. Influences very keenly felt at one time, at another pass by without leaving any trace of themselves upon the army. How often has it not been said that orders and counter-orders, forward marches and counter-marches, without any apparent object in view, or even night-movements, are sure to disorganise the best army in the world. Now an army has seldom been led backwards and forwards, marched during the night, halted, ordered and changed about more often, than was the corps of General v. Werder, from the 1st to the 10th January 1871, and yet there was no trace of disorganisation! That internal appreciation of the qualities of their commander on the part of the soldiers was here tried and not found wanting. They discovered that they were here in good hands, in spite of all apparent insecurity, and that there was no reason to lose confidence. It does not signify so much what demands are made, as how and by whom they are made. All rules that could be laid down on this subject are futile. The general must understand how to look into the hearts of his soldiers, in order to be able to perceive rightly, at each moment, what he can at the moment require of them. He must be a discernor of men. Scharnhorst long since bewailed that the psychological side of the science of warfare is so little known, and "that the chief use of history: the difficult and yet so profitable knowledge of the human heart, that is attained by nothing more readily than by the investigation of events themselves a consequence of great and far-seeing plans, is almost totally lost." The modern

history of war, even more than the old, shakes itself free from a discussion of psychological elements. It is content, in an abrupt style, which reminds us of the forms of antique buildings, to register facts or to build up critical conclusions, without describing the colours in which the picture exposed to our view is depicted. Thus it comes to pass that many soldiers, who are excellent in other respects, go wrong in this point; that either, judging by their own unwearying energy, they overtax their troops, or, by putting too low an estimate upon the power of their influence, demand less of their soldiers than these are capable of performing. Conventional doctrines touching the sparing of troops in war, lead at last to bad habits, which, when once ingrafted into them, become a power like the "spirit of the Prussian army" of 1806, which did not permit of living on the country or of lying down in the face of the enemy's fire.*

As every people and every army must be differently employed and led, according to its peculiarities and organisation, so is the general in each separate case permanently in need of pre-eminently special qualities. Though the character of a general be always of an almost similar stamp, yet in one case one side, and in another the other side, of that character must be specially cultivated. The ardour that fires the Southerner to martial deeds is incomprehensible to the soldier from the North. The calm firmness that befits the latter, leaves the former perhaps cold. It is knowing his people and his army that teaches the general to find the right way. His knowledge of men allows him at once to discover the proper channels through which to make his will felt, and to assign to his subordinate commanders the several duties most suited to their energies and inclinations. By this means much is attained. Fully one half of all the conditions of success consists in finding the proper persons to carry out schemes. Deficient qualities in a commander-in-chief may be here counterbalanced by adroitness, and the qualities he does possess doubled in effect.

To the less known but yet indispensable qualities of a commander belongs imagination, the step-child of our modern method of education. It flashes before the eyes of the young man pictures

* We must not, in this place, fail to point out a danger lying in "Kriegspiel," and in the excursions of the General Staff. In these exercises, which in other respects we rightly value as being conducive to efficiency, as a rule only normal achievements are presupposed, in order that the parties may fight under equal conditions. By this means we become accustomed to regard average performances as being those that are alone possible. But it is precisely the extraordinary performances to which, in war, great successes—nay, even success altogether—must be attributed.

of glory and greatness, and fires him to do the like. Yet that is not its highest sphere of usefulness. A too lively imagination may even lead to an over-estimate of one's personal strength and to false steps. But, for other purposes, it is most essential to a general. He must clearly present to his mind, at each moment during long and intricate marches and operations, how his own troops, and possibly those of the enemy, are stationed. And more than this, he must divine how they will be situated at the expiration of two or three days, or even more. Jomini lauds this quality in Napoleon, and attributes to it the rapidity and ease of all his arrangements. The positions which his corps, divisions, and brigades occupied at any given moment were always present to his mind. He forgot nothing, therefore, and left out of sight no resource of which he could avail himself for the objects he had in view; he thought of things which everyone else would have forgotten, and was rich in inspirations. That is, in the highest degree, the work of the imagination. It is of assistance, also, in the study of military history, which should, owing to its attractive form, be more than ordinarily profitable. It paints in detail small events, and allows of experiences being gained which are, perhaps, only carelessly hinted at in historical representations. An ill-controlled imagination, which has not been purified by a careful study of history, is most certainly of that precarious character that depicts fantastic dangers. But in anxious minds the same apprehensions are frequently due to a sheer want of imagination, and thence spring a thousand doubts, bringing wrong orders in their train. The enemy is supposed in a place where, if his last position and the time that has since elapsed were taken into consideration, he could not possibly be expected to be. Useless precautions are taken where other divisions of the army, if the situation were only properly grasped, ought to have adopted them. The notorious splitting up of the forces is also, perhaps, engendered of a deficient power of conception. Imagination simplifies the apprehension of the commands and dispositions of superiors; it aids us materially in making ourselves acquainted with their ground, because it presents the actual map clearly to our mind, and the places in question are the quicker recognised. It aids us more than we think in turning theory into practice.

If there were always time to think in war, one might perhaps be able to dispense with imagination, and measure all that was necessary with a compass or the map. But in the heat and excitement of battle we lack the leisure and the quiet requisite for solving such geometrical problems. The force of conception must know

how to conjure up a picture that shall serve us as a basis for our future operations ; and in order that no distortions and dislocations take place in it, the commander must not fail to exercise his fancy and to keep it working. As a rule, the importance to a general of a good memory is under-estimated.

Napoleon compared a man full of genius, but without a memory to a fine house without furniture, and to a stronghold without a garrison. War is a perpetual struggle with embarrassments which the enemy either causes us or attempts to cause us. Our object, therefore, must be to discover means to constantly help ourselves out of every strait, and, in this our endeavour, the recollection of similar situations in former times, and even of instances recorded in military history, is of extraordinary assistance. Even the most inventive brain would break down, did not a good memory afford it effectual aid. It enables us to first turn our experience to good account. Moreover, war demands great care in numerous details, trivial in themselves, but upon which the weal and woe of the troops depends. In a camp there are never ending duties of the most varied kind to perform, from the correction of a misguided soldier, up to questions of life and death for hundreds. Everything must be practically and rapidly done. And, therefore, the commander must have an excellent memory. Memory is, moreover, not a uniform faculty. Its objects are names, persons, facts, numbers, &c. After an historical and geographical memory, that for persons appears to be the most useful to a general, for it enables him to bring the right persons into the right places.

One of the most important talents of a general we may call that of a "creative mind" ; because to call it "gift of inventiveness" appears to us to be too shallow. There are only very few men in existence who have original thoughts. Ben Akiba's saying, "Nothing new under the sun !" is as true of the world of ideas as of that of phenomena. Most people in these days only make use of what they have inherited or acquired. Situations in war are of such a nature that they appear similar ; but they are never quite alike. The number of causes and forces is too great to admit of perfect congruity. The general cannot, accordingly, employ the exact means that have been once previously adopted. At any rate there will be something entirely new in the manner of their adoption. A spice of invention is always necessary, and here, then, comes in that ever regenerating power, the creative mind, as well as the inclination to employ it.

This stimulates us and enables us to deviate from the beaten track more freely. By this alone the general gains a great

superiority over his opponent who lacks this gift. He will continually *surprise* him.

Now, if will, ambition, and a love of fame, are blended with creative powers, the result is an irresistible thirst for exploits, and it is rightly asserted, that of two generals who are in other respects equal, the most energetic must gain the upper hand. This irresistible activity was the secret of the fame of Alexander, who recently has been compared by a writer to a man travelling in arms, who was always full of impatience for fear lest he might be stopped.

The mention of this irresistible energy leads us yet further. It makes great claims upon our energies, not only upon our intellectual, but upon our physical ones as well. Good health and a vigorous constitution are invaluable to a general. There have certainly been famous generals who were sickly, but that is only a proof of the extraordinary vitality of their spirit, and that they would have been able to achieve much more had not a part of their energy been devoted to the suppression of their bodily ailments. Torstenson commanded his army from a palanquin, and conducted brilliant campaigns. But we are also aware that disease at last overcame him, and that he was obliged, when little over forty years of age, to leave his army and his victories in the lurch, in order to retire to a sick-bed on his estates. Gout made Sweden the poorer by one great general and a series of successful campaigns.

Nature demands her due. In a sick body, the spirit cannot possibly permanently remain fresh and clear. It is turned aside by the selfish body from the great things to which it should entirely belong.

Doubly, yea trebly, indispensable to our modern commanders is good health, especially now-a-days, when, with the exception of such as are promoted by reason of their being high-born, they are allowed to become old before they are called upon to act in an influential position. Their duties, especially in the German army, are very exacting; and only a very tough constitution can hold out so long as it takes to ascend to the highest steps of the military ladder.

That a prosperous material position facilitates and does not impede an aspiring commander in his advancement, follows from what has already been said about officers generally. Such a position gives self-confidence and a feeling of independence, and maintains, where it is made prudent use of, physical freshness and health. Riches are only dangerous to men of moderate ability.

Bravery, too, deserves a few words of explanation, although it be naturally presupposed in the person of every soldier. A general needs a special kind of bravery. It is now-a-days said, and with a certain show of right, that all the world is brave, and that this quality is nothing so out of the way that great expectations should be based upon it. "But to assert that everybody is brave, is equivalent to declaring that everybody is a painter, a musician, or a mathematician."

The gods and heroes of antiquity had no bad consciences when they fled in battle before a stronger than they. And they were not, on this account, on any occasion excluded from the Olympian banquet. Our modern conception of courage, according to which the warrior is bound to defy even danger to which he thinks he must succumb, is deeply rooted in the ethics of Christianity and in our ideas of self-denial and self-sacrifice, which require of us to esteem our own life as nothing, when duty calls. In this sense the soldier who has never before set foot on a ship swears to be faithful on water as on land, although he is fully conscious of his helplessness on that element. The high idea of faithfulness to duty, which is implanted in us by training, induces at last even the timid man to show himself brave and to suppress his fear of death and danger. The numerous instances of like self-control that he sees all around him, make him enthusiastic in spite of himself. The fear of being despised by his companions in arms as being a miserable coward, is at last greater than his fear of death.

But it is not this kind of bravery, acquired by training, that can profit the general. He requires that innate courage which is a rare quality of great men. It serves its possessor without his being conscious of it.

Sense of honour and vanity keep most men firm in the face of peril, and externally, at all events, there will scarcely be any difference between them and those, in the case of whom courage springs from a grand and noble heart. But, such are secretly busied with themselves, with their courage, and with their behaviour, and a great part of their moral courage is absorbed by their own personal affairs. They are less clear than ordinary, the beams of their genius are thrown in extraordinarily thick rays, and perhaps to their own astonishment they do not find themselves equal to the task imposed upon them. Innate courage does not need an artificial current in order to maintain itself; to it contempt of death is something so natural that it does not diminish those other intellectual and moral qualities, but rather renders them all the more capable of higher achievements, as the excite-

ment of the moment only increases the internal pressure that nerves the energies.

And so we admire it, in illustrious soldiers, that they always become more clear-sighted and inventive in the moments of the greatest danger, when all others about them are working mechanically, as it were, and with dulled senses. Only such a courage as is incapable of understanding how it is possible not to have courage singles out the true soldier among his fellows. It is such courage as Shakespeare attributes to Cæsar when he puts into his mouth the following words:—

Of all the wonders that I yet have heard,
It seems to me most strange that men should fear;
Seeing that death, a necessary end,
Will come, when it will come.

From the great number of conditions, each and all difficult to fulfil, it follows that perfect generals are a rarity. This has never been gainsayed. Frederick described the perfect general as “an *être de raison*, a platonic republic, the *centrum gravitatis* of its philosophers, the stone of wisdom of its ohymists, a work of creation that merits our greatest admiration.” In Tamerlain’s *Institutes*, nobility of birth combined with that of the soul, intelligence, daring and boldness, bravery and shrewdness, determination and discernment, staunchness and deep deliberation, are demanded. When Onosander only required of his general that he should be abstemious, sober, saving, industrious, of a clear understanding, high-minded, and of middle-age, eloquent, a father of a family, and, if possible, of good descent, he had before his eyes an excellent average general, but not an Alexander or a Cæsar, a Frederick or a Napoleon.

It is difficult to find the mean among all these various conflicting qualities. Such were a gift that only nature, in the highest of good humour, would bless us with.

Now it would seem as though these great generals, in whom so much excellence is combined, must appear as the best of mankind, and take our hearts at once by storm. But neither of Frederick, nor yet of Napoleon, could this be asserted by those who came into personal contact with either. As to Frederick, let anyone who will read Kattenborn’s letters,* in order to convince himself that he was a difficult person to get on with. The ordinary explanation, that where there is much light there must also be much shadow, cannot

* Letters of an old Prussian officer, describing certain traits of Frederick’s character. Hohenzollern, 1790.

satisfy us in this regard. More exact investigation will show us that the general (and in these modern times this is more true than ever it was) needs certain qualities which are neither grand, humanly speaking, nor such as would be pardoned in ordinary mortals, unless they made up for them by other grand traits of character.

Strength of will can seldom itself be felt without austerity. In the wars of the present and the future, immediately before and after the crowning victory, such great masses of men are huddled together that, even owing to this alone, abundance of distress and misery must be caused. And then, again, the battle-fields upon which hundreds of thousands have fought! They are scenes of every form of human misery. No theoretical conviction that all that we see is necessary and unavoidable can help us over the impression which the aspect of suffering makes upon us. It frequently happens that those are most melted at the sight who before, owing to a secret feeling of weakness, have shown themselves most hard-hearted, and who, to judge by their language, waded knee-deep in blood.

Here also it is only special qualities that protect. It is that severity which appears to be closely allied to the feeling of sovereignty that must be inherent in the general. We often speak of the contempt for mankind that the great generals have. But this needs explanation. We mean by it a feeling of indifference to the fate of individuals, which is only displayed where great aims are to be attained. In private life both Frederick and Napoleon had their soft moments.

But the great ends to be attained are not always clear to the masses. They vanish from their minds immediately they are engrossed by their own personal affairs. And then it is that called-for severity of the general appears to them to be nothing but coldness of heart, and that is repulsive to their feelings. The commander who, taken by compassion, shows his pity for the wounded, or possibly allows himself to be detained by compassion at the scenes of misery, runs the risk of allowing the most valuable moments for action to pass by, without taking advantage of them. And yet we start back in repugnance to the man who only lets his eye pass over the decimated and exhausted battalions, in order to enable him to calculate what he can still demand of them.

The inexorability, and that seemingly hideous unfeelingness, belong to the necessary attributes of him who will achieve great things. In the case of the general there is only one crime for which history never pardons him, and that is—defeat. A strong

character will ever bear this before his eyes. But the less impression the displeasure of his surroundings makes upon him, the more severe does he appear.

Not merely human, but intellectual, imperfections also strike us in the generals of the first ranks. Shakespeare's words about fearlessness, hint at a *tendency to fatalism*. This was peculiar to most heroes, and appears to betray a narrowness of soul, but is in their case perfectly explicable. Experience teaches them to appreciate the power that lies in the co-operation of small causes which a man can neither foresee nor control; hence the belief in a fate that, in each individual case, declares either for victory or defeat. In contradiction external to it, is the fact that all heroes, from Alexander to Napoleon, were filled with a belief in their mission, which gave them, in the most difficult situations, a sense of security that could never be shaken. But, strictly speaking, there is contained therein the conviction that fortune, in the long run, only remains constant to the able man, and that the chance which rules divine freedom—" *Sa sacré Majesté le hazard*," as Frederick called it—declares quite as often for us as against us. Not a belief in a supernatural election that has declared for them, but a belief in their own excellence it is that, in the case of great soldiers, is expressed as being a so-called belief in their mission.

This severity we can accordingly learn to comprehend and to pardon, and acknowledge the imperfections of character to be something different. But still worse do the following qualities of a hero's character look, and none the less are they demanded of him in these modern times.

Even an Alexander or a Cæsar would, if he entered our army to-day, be compelled to pass through all the intermediate grades from second lieutenant up to commander-in-chief, before being in a position to turn to account his inborn strategical talents.

On the broad path of life there are many rocks to be rounded, both such as life itself, as well as life's duties, place in our way. On these open and magnanimous natures are easily wrecked. Good-nature and conviviality have often been disastrous to persons with empty purses. Faithfulness and devotion have lured many to the fate of a superior or a friend. Excellent officers have had to forego their career, because they could not help feeling sympathy for subordinates who had been unjustly treated, and thus involved themselves in their fall.

In order to escape these perils it is necessary to refrain with consciousness, and to shut oneself off from the mass of one's colleagues. We thus are compelled to perceive the usefulness of

a quality that, when treating of the corps of officers generally, we were obliged to reject as being the most dangerous of all—namely, egotism. But it is impossible to escape from it; for it is a fact that no one has ever accomplished anything great in the world without a certain amount of egotism. Yet here we must draw an important difference between the ordinary mortal and those few God-favoured natures who have been predestined to great deeds. In the case of the former, egotism is nothing more nor less than a predilection for the miserable “I”; in these latter, on the other hand, egotism is a conscious husbanding of strength in anticipation of coming opportunities, when it shall be displayed all the less reservedly for the benefit of the world. It must not be previously split up in order to attain lesser objects. A certain apathy in the face of all the trivial daily excitements of the world helps great natures most to preserve themselves from premature exhaustion. But this quality is not an amiable one. On this account the great heroes of history, or at all events those of modern times, were but seldom popular among their playmates of their youth. They were always accused of coldness and calculation.

It cannot be denied that cool reserve, whether it be conscious or more instinctive reserve, gives the character in process of time a trait of genuine selfishness. Hence it possibly comes to pass that in great generals and statesmen we so frequently meet with the ugly greed of filthy lucre, and that, whilst the mob shouts applause at its idols, and attributes to them all good qualities besides their great ones, the more initiated shrug their shoulders in pity at this credulous harmlessness. Strictly speaking, there is at work here only that selfsame quality that was the earnest of their future greatness. Perfectly unselfish natures are sure to fall a prey to some misadventure on their long journey up to field-marshal. We wish, as we have already said, to have very many such for comrades; it can after all only be single individuals that can mount the highest step.

There have, it is true, been exceptions—grand men, who never spared themselves, and yet were never exhausted—but they are a rarity even among great men.

Amongst commanders of the first rank, enthusiasm for their historical aims will always be identical with their love for the glory of their own name; so much so that both are inseparable. This gives an appearance of selfishness, which King Frederick so proudly characterised, in writing to his minister Podewils, shortly before the crowning battle of Hohenfriedberg: “My pride is that

I have attributed more than any other to the greatness of my house, and have played a great rôle among the crowned heads of Europe. *To keep myself in it is also a duty I owe myself, and one that I will fulfil at the risk of my happiness and my life. I have no other choice: I will assert my power, or it may perish, and the Prussian name be buried with me!*" Without Frederick's greatness no Prussian greatness!—thus thought the hero-king, and in our admiration of the feeling that animated him in writing these words, we pronounce absolution to all heroes for their noble egotism.

Historical investigation teaches us that famous soldiers were in nowise only distinguished for popularity begotten of fine human qualities, but that sundry other traits of character, objectionable in ordinary life, were essential to them; and thus it follows that no attention must be paid to these where the advancement of young gifted men in the army is concerned.

The principle that no one is irreplaceable, and that the army still continues, even when the best have left it, is certainly an excellent one, but it must not induce us to let the able man drop merely because he has a number of unpleasant qualities. The French Colonel Desprels proved two years since, in a lively historical treatise, that in the soul of the great heroes of the past there are to be found, almost without exception, the germs of harshness, mistrust, jealousy, imperiousness, selfishness, restlessness, and the like, and that, compared by the light of the ordinary peace-standard of the present day, they would have little prospect of belonging to the elect. The inclination to promote those of agreeable manners in their stead readily spreads. Indulgence in respect of all such traits of character as do not prejudice its efficiency is accordingly essential for an army that will be well led. It is a fact that in late years the most famous generals have arisen from the number of uncouth subordinates and abrupt and reserved comrades.

There are certain human virtues which we cannot afford to dispense with in the social position of the officer-corps and its body; but, so far as is possible, tolerance must also be used in favour of an able man who compensates for personal defects by great exploits.

There is no other way than this to rapidly raise up great men from low grades, without the military system taking harm. An intentional search after generals has only resulted in the choice of Macks and Massenbachs, and it were good luck if only a Rüchel could be discovered in this way. Much safer it is to leave the

roads open to strong characters, but to leave them to their own devices on these roads.

Many of the rocks of a military career are at once avoided by those who are born in high places. Princes of the blood royal avoid difficulties which shipwreck an officer of humbler origin. The disfavour of superiors, the jealousy of comrades, petty conflicts with the conditions of civil life, and the difficulty of being known to persons of influence, have ended many a promising career. Noble parentage helps to overcome all these difficulties; it is an invaluable christening present for an ambitious man of genius. Such persons become early accustomed to rule others, and to see life on a grander scale, and they more readily take responsibility upon their shoulders. Promotion brings a prince's son in youthful years into the high offices that otherwise only old men attain to, and the duties of which, all the same, demand youthful vigour. No wonder that, in modern times, royal lineage has furnished the largest proportion of famous soldiers. Gustavus Adolphus, Bernhard von Weimar, Frederick William, the victor of Fehrbellin, Condé, Turenne, Eugene, Charles XII., and Frederick, all of whom were already seated on thrones, or were near to them. Only the commanders-in-chief of the first French republic arose for the most part from amidst the darkness of humble origin. Napoleon was a scion of a Corsican Patrician family. It lies in the nature of the case, that the great responsibility which a command entails can, in these days, now that people and army are one, be best undertaken by the Sovereign himself. On this account that nation will be most secure whose rulers are also its military commanders, and whose royal house knows how to foster and keep alive the inclination for and the vocation of the arduous duties of a commander.

(To be continued.)

A Chat about the "Straits."

By H. N. S.

IN spite of school-boards, compulsory education, and a variety of ingenious devices for instilling knowledge into the mind of the British youth, a lamentable amount of ignorance still prevails with reference to our Colonial possessions. Indeed, in certain circles, where intellectual culture is valued far beyond any other attainment, it is by no means uncommon to meet with individuals whose minds present a hopeless blank in directions other than those in which their special studies have chanced to lie; and who seem, moreover, to regard knowledge bearing on the prosperity of the Empire to which they belong with the sort of contemptuous indifference which one might conceive a Royal Academician extending to the efforts of some vulgar caricaturist. Under these circumstances there need be no surprise at the fact that to the majority of stay-at-home Britons the very flourishing and rising group of possessions situated on the south-west side of the Malay Peninsula, known as the "Straits Settlements," are a sort of *terra incognita*, of whose existence they are only occasionally reminded by a "little war" with its unpleasant corollary of a "bill." That any great movement is in progress in so remote a corner of the world, accompanied by a rapid development of British influence over a rich though little known territory, will, of course, be news to these folk. That such is the case, however, no one acquainted with the facts will be prepared to deny; and, unless appearances are utterly delusive, the next ten years will witness some striking changes in the Malay Peninsula, together with largely increased "responsibilities"—those bugbears of modern "statesmen"—in the shape of territory.

In districts where, but a few years back, tribal wars were devastating the country, paralyzing industry, and preventing trade; while pirates swept the seas, the British merchant can now travel in safety, and ship his goods without feeling any anxiety as to

their fate. Native quarrels have been settled by British mediation. Residents have been appointed in the States contiguous to British territory, whose advice is synonymous with command; and with the restoration of order and increased security for life and property, capital is flowing in, industries are being established, agriculture is slowly altering the face of the land, and the vast mineral wealth of the country is being developed to an extent undreamt of a few years ago—the "protected" state of Perak alone exporting, in 1882, 7,000 tons of metallic tin, equal in amount to the whole production of Cornwall, the mines giving employment to 40,000 Chinese. Roads are being made in every direction; steamers ply regularly between the principal ports, while in the native State of Salangore a railway is at work, and once again the "Golden Chersonese" bids fair to be a very mine of wealth to its possessors.

In comparing the nations of Asia with those of Europe, so far as their characteristics are concerned, it has been said that while the Chinese may be considered as the Germans, and the Japanese as the French of Asia, the Malays are undoubtedly the nearest representatives of the modern Spaniards. This comparison is not altogether fanciful; and if a certain dignified pride, with a decided aversion to hard work, is at all characteristic of the Spaniard, his counterpart will be found in the Malay, whose warmest admirer will scarcely do him the injustice to accuse him of industry or perseverance under difficulties. This much is certain, that if he had been left to himself, he would never have worked out his own regeneration, or that of his country—rather otherwise in fact; and it may be conscientiously averred of the progress which has been achieved of late years, that a very insignificant part has been brought about by the sons of the soil. Who, then, has borne the heat and burden of the day? To what influence is due the extraordinary development which has been witnessed during recent times? The changes are due to two distinct and extraneous causes. One is the *pax Britannica* which reigns throughout the peninsula, and the other is Chinese immigration. John Chinaman is, in fact, a very palpable power in this part of the world at the present moment, being the chief agent in the development of the natural resources of our own and adjacent States. It is here, indeed, that the traveller first comes into contact with that remarkable race which is spreading steadily year by year over the greater part of the Eastern Hemisphere, and conquering vast tracts of country by the somewhat novel, though peaceful method of colonisation. The most striking fact in connection with recent Chinese progress, is their progress over the

world. There is, indeed, hardly a country now which is not beginning to feel the wave of Chinese emigration beating on its shore. Most English people have some sort of hazy notions concerning the emigration from their own little Island, but few have any idea of the vast stream of Chinese emigration which is setting in every direction, and threatening, at no distant date, to convert the Pacific Ocean into a Chinese lake. If we carry the eye down the Malay peninsula to Singapore, the most southerly of the British "Straits Settlements," which, owing to its unrivalled position, has become not only the great emporium of trade between the East and the West, but the great centre of Chinese immigration, we find an unceasing stream of pigtailed flowing in here from Canton, the Island of Hainan, and from Amoy; and from Singapore as a centre, they radiate in every direction, coasting along the Malay peninsula to Burmah, flooding the native States, as well as the Dutch possessions opposite, and building up flourishing settlements in our own territories.

Most of the Chinese colonists in Singapore are highlanders from the Swatow and Amoy districts; hence the similarity between the colloquial in most general use here and that of the localities named. As an instance of the vast emigration from these ports, it may be mentioned that in the year 1884 84,471 natives left Amoy for the "Straits." That they do well out of their own country is testified by the fact that although the emigrants leave home without any money, they managed to forward last year to their relatives at Amoy a sum of between 5,000,000 and 6,000,000 dollars! Of course there is a return stream of successful colonists, but this is far exceeded by the outward flow.

There is a curious and little-known feature of Chinese emigration to the Straits which is worth a passing notice, as affording a clue to the vicious characteristics manifested by a portion of the colonists. In the Consular reports from China mention is made of the fact that in one of the provinces a certain general, instead of executing, allowed, during a term of five years, 80,000 youths of the class of outcasts to emigrate to Singapore, for periods varying from five to ten years, in order to allow them to retrieve their characters abroad. Whatever may be thought of the device of utilising our settlements as reformatories for the criminal classes of the Chinese Empire, it cannot but be gratifying to have the assurance that after a course of British rule a very decided improvement is noticeable in the character of these "outcasts," many of whom, on their return to China, the same authority tells us, "become marked by their intelligence and industry." So that, after all,

British rule is not the corrupting influence which some so-called "advanced" politicians would have us believe!

Statistics give us a better idea than anything else of the relative strength of the Chinese element in the Malay Peninsula, and, confining ourselves to the British possessions as being the only portion for which any reliable data are available, we find in the Census of 1881 some suggestive facts tending to show that, of the various nationalities represented, the Chinese element is not only increasing rapidly, but that the rate of increase is relatively much greater than that of all other nationalities combined. Thus, out of a population of 423,884, 174,827 are Chinese, 238,066 are Malays and twenty other classes of Asiatics, 6,904 are Eurasians, 1,656 Europeans and Americans, and 816 Jews and Armenians.

The proportion of Chinese *women* who emigrate is still very small, but it is increasing every year, from 107 per 1,000 in 1871, to 127 per 1,000 in 1881. The resultant evils from so great a disproportion of the sexes are well-known to everybody who is familiar with the social habits of Chinese colonists, and these have naturally lent additional weight to the arguments of the exclusionists in America and in our own colonies. But there is another phase of the emigration question which is less known. This was alluded to recently by a writer in the *Times*, who, from his connection with the Singapore Police, may be assumed to have known what he was writing about. He said: "Is not the fact well-known that numbers of young children are kidnapped in China—and in our colonies, too, the girls to be reared, some to be educated in European languages, or taught music and singing and other accomplishments, on purpose to be sold in our colonies when twelve or fifteen years old, the price ranging from two hundred to a thousand dollars? Much has been written about the abuses of coolie traffic in slavery; but I allude to the simple sale of women and girls as slaves in these Eastern colonies. The traffic is principally for our Chinese colonists, and as they live generally in a distinct quarter of our towns, and keep their womenkind secluded almost more than the Mahomedans, their arrangements, domestic and otherwise, are not interfered with, and thus escape observation."

Many people labour under the delusion that the Chinese are a miserable lot of savages, of weakly physique and small stature. But though, possibly, the type may vary in different parts of the Empire, visitors to the "Straits" cannot but have been impressed with the splendid physique of the colonists to be met with there. Indeed their patient industry and extraordinary powers of endurance in a climate which almost incapacitates Europeans from

undergoing any great amount of physical exertion, impress one very favourably with the staying powers of the race. In Singapore alone, out of a population of rather over 95,000, there are some 80,000 Chinese, to whose energy and industry the extraordinary development and prosperity of the colony are largely due. The presence of John Chinaman here is a very palpable fact; so much so that the visitor who lands here for the first time is apt to be appalled at the number of dolorous-looking people, with flat faces, elongated eyes like burnt slits in a blanket, pigtailed, and roomy breeches, which he encounters; and but for the reassuring sight of the British flag waving peacefully in their midst, he might well believe himself to be in a celestial city. And what must be the surprise of the intelligent foreigner who has always heard so much of Chinese aversion to change, when he observes the style of living indulged in by the well-to-do colonists. Free, here, from the numbing influence of their own officials, they launch out into habits of luxury which, if practised in their native land, would be sure to attract the attention of some impecunious mandarin; and while preserving their natural characteristics, they show no silly prejudice against adopting the comforts and conveniences of a more advanced type of civilisation, and sometimes develop tastes which excite the astonishment of Europeans. When the writer was at Singapore it was considered the *sine qua non* of Celestial respectability to be adorned with a white billy-cock hat, and it was by no means uncommon to see the feet encased in shoes of patent leather, instead of the awkward felt "canoes" which do duty in China for boots. But, the highest ambition of a Straits Chinaman is to be the proud possessor of a carriage-and-pair, with smart liveried servants. The *size* of the horses, too, would seem to be regarded as a measure of the social status of the owner, *shape* or breeding being a secondary consideration. Thus equipped, at certain times of the day, the celestial aristocrats of Singapore would drive solemnly up and down the "bund," the admiration and envy of all beholders. But, certainly, if the countenances of these smart folk afforded any criterion of the amount of enjoyment derived from this sort of exercise, it must have been small indeed, for they looked as if "melancholy had marked them for her own." Some of the young "bucks" had even developed a kind of "horsiness," and might actually be seen driving "high steppers" in smart dog-carts, a phase of Celestial enterprise which almost took one's breath away when seen for the first time. But then, a "Straits" Chinaman is decidedly an advanced type of Mongolian humanity, who, whatever his vices may be, has at least shaken off that deeply

rooted conviction which acts like a drag on his countrymen at home, that everything new must necessarily be evil.

Singapore has not inaptly been described as a Chinese colony under the English flag. Whether any deep bond of sympathy exists between the colonists and the dominant power is perhaps an open question, especially when it is considered how very marked are the prejudices of race and religion in the intercourse of Europeans with natives of the East. That the better-class Chinese should be encouraged to take part and to interest themselves in matters affecting the well-being of the community in general, and the Chinese colony in particular, is obviously a thing to be desired; and there can be no question that our Chinese subjects do very fully appreciate the perfect liberty and security for life and property which they enjoy here. Indeed, they cannot but contrast the integrity of English colonial officials very favourably with the corruption which prevails through every department of their own Government. One of the most successful and intelligent members of the Chinese mercantile community—the late Sir A. K. Whampoa—was for many years a member of the Singapore Legislative Council. This amiable gentleman enjoyed the friendship and esteem of a large circle of Europeans, and his kindly hospitality to English officers of all ranks will be gratefully remembered by visitors to the Straits.

The most popular member of Singapore society at the present day is undoubtedly the ruler of the adjacent native Malay State on the mainland—the Maharajah of Johore,* whose garden-parties and entertainments are among the most pleasurable events of the year. His "official" residence is situated in the midst of tastefully laid-out grounds on the north shore of the narrow channel separating his territory from the island of Singapore. At one time this channel was the great highway for ships between the east and west; but since the rise of Singapore the traffic has been diverted to the south of the island, and the quiet waters are now only ploughed by the Maharajah's steam launch. Though by no means a palatial abode, the house is in striking contrast to the residences of most Malay rulers, and bears in every part the impress of contact with, and enlightened appreciation of, European civilisation. One entire wing has been built expressly for the accommodation of foreign guests, and is furnished in accordance with European ideas and provided with every comfort and convenience. The finest room is the dining-hall, a really magnificent apartment, with a floor of polished marble, and capable of accom-

* Recently created a "Sultan."

modating a large number of guests. The table-service is all in the very best taste, and the attendance at meals excellent. The waiters are young Malays, becomingly dressed in white tunics, with the crimson "sarang"—a sort of handkerchief, showing below and extending to the knee. A light grey sort of fez is worn on the head, bound with a handkerchief of orange silk. The feet are bare, so that the movements of the attendants are perfectly noiseless.

On the occasion of a very pleasant visit here some time ago, our party every evening at dinner was increased by several officials and native gentlemen: amongst others, the Chief of the Arabs in Malacca; the Chief of the Arabs in Johore; the "Captain" Chinaman; the Johore opium-farmer (Chinese); Rajah Mahdi (not the one of Soudan notoriety), the hero of Salangore, and at this time a refugee in Johore, a slightly-built Malay, with a pale handsome face, and rich, long, black hair falling over his shoulders. The Maharajah was the only native gentleman able to converse in English, so the conversation was neither very lively nor interesting. The Chinese guests marked their approval of the excellent wines in a manner that must have delighted the genial host. The conversational shortcomings were compensated for by the performances of the Maharajah's private band, which played every evening during dinner; and, considering the youthfulness of the musicians, and also the fact that, at the time of which I write, they had never heard another band perform, their playing was very creditable.

Amongst the visitors staying in the house was a distinguished traveller and student of nature, who was about to set out on a journey of considerable difficulty through the central and least-known portion of the Malay Peninsula, with a view of gaining information about the aboriginal tribes, and of studying their languages and manners and customs. The tribes of whom most was known at this time were the Orang-utan, Orang-semang, Orang-raiat, and Orang-sakai; but the aborigines were fast disappearing before the influx of Chinese colonists and civilisation; and it was this gentleman's intention to collect all the information possible before the tribal distinctions had been entirely obliterated. Whatever his scientific attainments might have been, he was decidedly a "character"—what some people would call "intense"—so much so, indeed, that the conventionalities of civilisation had been scornfully repudiated, and a philosopher's gown adopted as the only garb at all in harmony with his tastes and pursuits. To avoid any chance interruptions to his meditations he had con-

stituted his room into his castle, which was stuffed full of the strangest assortment of "objects" conceivable, and from here he scarcely emerged sometimes for days together. In a weak moment the Maharajah had invited him for a "visit." He had already been there three months when the writer arrived, and was beginning to be looked on as a permanency. The fact was that though he professed himself to be quite "resigned to his fate," in the shape of the impending pilgrimage through the jungle, he was in "such a highly nervous state" from confinement and over-work, that he could never screw himself up to the point for starting when the time came. Day after day he had announced his intention of setting off next morning, but when the moment arrived the flesh was too weak for the spirit. But as "it was all in the cause of science," as he would observe, who could complain? Assuredly science never had a more devoted slave, and if anything was wanting, whether for aiding his researches, or for his own convenience, the request was always backed up with the unanswerable assurance that it was in the "cause of science."

On the evening of my arrival at Johore, the savant chanced to be sociably inclined, and imparted a great deal of interesting information about the Papuans amongst whom he had been wandering for the past two years. He was very skilful with his pencil, but as his drawings were simply studies of the human figure in various stages of development, executed with minute care and accuracy for scientific purposes alone, they were interesting to the student of science rather than to the lover of the picturesque. He must have exercised great tact to have been enabled to collect such a mass of valuable materials, and, supposing these to have been faithful representations, it was certainly a revelation to discover that the "human form divine" was capable of such extraordinary variations from the orthodox type as had been portrayed by our friend. We had scarcely been acquainted many minutes, before this distinguished savant set me to work on a profile sketch of his head according to scale; and when completed he took it in hand to put the finishing touches—doctoring it up, in fact, according to his own ideas of the eternal fitness of things phrenological, developing a bump here, toning one down there, and improving the sketch generally, until it approached more nearly to the orthodox contour. What became of this valuable work of art I cannot say, but, judging from the fact that the eccentric model actually set out on his travels next morning before cockerow, it may possibly have been intended for posterity in the event of the original succumbing to climate, or to the vicious habits of the aborigines.

His sole companion in his wanderings was a Papuan boy aged thirteen; the most villainous-looking young scoundrel human eyes ever lighted on. It was reported that this young gentleman had strict orders from his master that in the event of anything happening to him he was to cut off his head and carry it away at all hazards; rumour, moreover, affirming that this precious object had been bequeathed to a certain learned society in St. Petersburg; and from the fact that while rambling in New Guinea a box for the express purpose of holding it had formed part of the equipment, the loss of which on one occasion had caused deep distress to its owner, there are strong grounds for believing the story.

Our friend was an enthusiastic believer in Darwinism, and in himself. When on his travels he underwent the most terrible hardships with a cheerful and contented mind in the cause of his beloved mistress, Science, and would sometimes live for days together on roots. He invariably slept in the open for choice, slinging a hammock between two trees, with a waterproof sheet spread over it; while as to mosquitoes and other small deer, he had a little joke that he was fond of repeating, "that they didn't like Russian leather." In case any of his aboriginal acquaintances should prove treacherous, he carried about a little bottle of deadly poison, so that he could put an end to himself in a gentle way. On the whole he was a queer fellow.

Amongst other sources of revenue, the Maharajah derives a very snug income from some extensive steam saw-mills. These are his private property, and they execute large orders from India, China, Java, Mauritius, and even South America. When the Indian railways were being constructed some years ago a golden harvest was reaped from the supply of sleepers at half-a-guinea a-piece, but the substitution of iron cradles has greatly affected the demand for the former. The mills are under English management. The timber is principally teak, and a peculiar kind of cedar. The trees are cut in the forests up country, floated down to the sea, and then made into rafts and brought round to Johore. The teak is of excellent quality, and being one of the few sorts of wood capable of withstanding the Indian climate, as well as being impervious to the attacks of the white ant, is, of course, invaluable. It is said that piles of Johore teak have been found to be in a good state of preservation after being in the ground for a hundred years. The cedar is very light, yet strong and durable, and is much used for building purposes.

A short line of railway was being constructed at Johore at the time of which I write, and, being the first attempt of the

kind in the Peninsula, naturally attracted a good deal of interest, especially as it was being built on somewhat novel principles; the rails as well as the sleepers being made of teak. The saving from the use of this material was, of course, considerable, and, in the event of the line proving commercially successful, iron or steel rails could easily be substituted so as to admit of increased and heavier traffic.

To return to Singapore again. Of all the flourishing settlements which have sprung into vigorous life under the stimulating influences of British rule, the rise and progress of this great commercial entrepot is perhaps the most remarkable. To the casual visitor who beholds the present flourishing and densely populated city, with its fine public buildings, magnificent wharfs, and ample roadstead crowded with shipping from every part of the world, it must seem incredible that some sixty years ago the site was occupied by nothing more important than a Malay fishing village standing in a wilderness of jungle. And having overcome his feelings of incredulous wonder, he cannot but admire the far-seeing sagacity of the original founder of the settlement, Sir Stamford Raffles, who, could he but behold the Singapore of to-day, would feel that his dream founded on the splendid natural advantages of the site had indeed been more than realised.

The scenery of the island, though lacking in grandeur, is characterised—as might be supposed from its geographical situation so near to the Line—by all the mysterious and voluptuous beauty of tropical vegetation, whose wild luxuriance, richness, and variety is indeed "a thing of beauty and a joy for ever." The high though equable temperature of these regions, seldom varying more than twenty degrees or so throughout the year, combined with, perhaps, an excess of moisture—scarcely a day passing without something rather heavier than a *douche* falling—forces all vegetation to a remarkable degree, and at the same time keeps it bright and fresh. There may be seen here, what is indeed a rarity in tropical lands, soft, green, well-kept turf, equal to any English lawn.

In traversing the island a visitor cannot but be struck with the exceedingly small area of land under cultivation, compared with the extensive tracts which, after having been once cleared and temporarily occupied, have been allowed to relapse into secondary jungle. This is owing to a variety of causes, amongst others the attempt to raise unsuitable crops, over which a good deal of money has been lost. The area of fruit cultivation, both for local con-

sumption and for export, is rapidly on the increase, and, looking to the great capabilities of Singapore in this respect, some surprise may well be felt at the absence of any attempt to develop a market at home. When, for instance, we find pine-apples growing in fields like cabbages, and selling on the spot for a penny a-piece, one cannot but think that the preserving of these for export would prove a remunerative speculation. And yet, as far as one can learn, there are no "canning" establishments in the island. Then, again, Singapore is the home *par excellence* of the delicious mangostine, and it might be thought that human ingenuity could devise some way of preserving the delicate flavour of the fruit to enable it to stand the voyage to Europe. Yet it is an unknown delicacy on London dinner-tables.

Another *specialité* of the Straits is the dourien, a fruit of doubtful reputation. To most people, indeed, the aroma which it gives off with extraordinary generosity is far too suggestive of an advanced stage of decomposition to invite even a trial. But old stagers, who have conquered their first aversion to the fruit, invariably speak of it in terms of rapturous delight. The effect it would have on the guests at a dinner-table at home would be an interesting subject for speculation.

Talking of rainfall, it is worth mentioning that meteorological records point to a considerable decrease of rainfall of late years here, accompanied by greater heat. And these climatic changes are attributed to the reckless destruction of forests on the adjacent mainland of Johore. But the evil effects of this diminution of forest area have been mitigated to some extent by the rapidly-increasing culture of the cocoa-nut palm and other fruit-bearing trees in Singapore. The forest areas of the Straits Settlements have been estimated as follows: Penang and Province Wellesley, 110 to 120 square miles; Malacca, 160 to 170; and Singapore, 20 to 30 square miles. And yet, strange to say, with such a wealth of timber, the export is almost *nil*, Singapore even importing her chief supplies from Johore and Rhio. At the same time, the forest areas are rapidly decreasing, and no means have been taken to put a stop to this evil, with its attendant danger of climatic disturbance. This decrease is chiefly brought about by the practice of clearing land for temporary occupation, it having been found cheaper in practice, after raising a few crops, to abandon the exhausted soil and to make a fresh clearing, with the result that, in a few years, the old clearings are overrun with a dense tangled mass of "lalang" grass and low scrub, which defies all future efforts at reclamation. The waste of timber which is going on, chiefly through the absence

of any means for conveying it to a suitable market, may be inferred from the fact that, in making a clearance for cultivation, the trees are left just as they fall, and the crops are raised between the trunks, which only disappear in course of time through the natural process of decay.

With a view to arresting this reckless destruction of forest, and to provide against the deterioration of the magnificent natural resources of the Malay territory, a form of forest conservancy has been very properly suggested, in conjunction with a system of cultivation and acclimatisation. This is especially desirable in the interests of that most valuable and comparatively rare product, the gutta-percha tree, which is being well-nigh exterminated here; and, though indigenous to Singapore, the tree now only exists in the form of a curiosity.

Some idea may be formed of the extent of the destruction which has been going on in the past from the fact that, to supply 920,094 lbs. of gutta-percha, the amount exported in only two years from Singapore, 69,180 trees have been sacrificed.

It would be easy to give instances of the disastrous consequences ensuing from the annihilation of the indigenous products of a country, as well as from the reckless destruction of forests.* And, unless the wasteful system which obtains in British and Native Malaya is quickly checked, it can only result in impoverishing these magnificent territories for centuries, and in effecting climatic disturbances which must prove disastrous to the cultivation of other products in the near future.

It may be considered presumptuous in a mere traveller venturing to offer an opinion on the thorny question of Malay politics. But, with all due deference to the "oldest inhabitant" in the Straits, there are certain facts bearing on the future of the Malay Peninsula which stand out beyond the region of mere opinion, and point to conclusions that are well worthy of consideration. For instance, there is the fact, of which there can be no doubt, that the disturbing element at the present time in the "protected" States is the presence of John Chinaman, with all his virtues and his vices. His frugality, as well as his temperate and industrious habits, cannot be gainsaid, and we may even admit that, under a Government which ensures him the quiet enjoyment of his gains, and at the

* See especially account of St. Helena in Wallace's *Island Life*. Also note results of deforesting in Spain, Northern Italy, and the United States of America, where it is said that "the enormous clearance of forests which has been going on for the last century has materially affected the climate. The rainfalls have notably lessened, and the rivers are no longer navigable to the points which could be reached fifty years ago."

same time is strong enough to enforce order, John is tolerably quiet and law-abiding. But it cannot be denied that the most troublesome, because the most numerous and most aggressive subjects that the native Rajahs have to reckon with, are the Chinese. Truth to tell, but for British help these potentates, *rois faineants* in many cases, would be almost powerless in the face of the swarms of pig-tails which are streaming in year by year. And the question arises whether the Chinese will not attempt, as they did once before, to seize these territories for themselves. All is quiet just at present, but this is rather the stillness of a volcano, and no one knows how soon some bone of contention may arise in one of the native States leading to an outbreak of Chinese, and their defiance of the constituted authorities.

The prospect of a lawless Chinese population swarming on the confines of British territory, acknowledging no supreme head, and ripe for any mischief, is not a pleasant one to contemplate, fraught as it would be with danger to the peace of our own subjects. The problem, then, which is beginning to assume definite shape, and must ere long press for solution, is whether this magnificent territory is to be ultimately Chinese and anarchic, or British and law-abiding. And, as the crisis must come sooner or later, we may as well be prepared for it.

Of course to the eccentric "statesmen" who find occupation in moaning over the "responsibilities of Empire," the prospect of fresh accessions of territory cannot but prove distressing; but the English race is not so decrepit and played out as these old gentlemen seem to imagine, and is very well able to absorb a good deal of territory yet without developing any alarming symptoms. The fact is, that a long course of London dinner-parties, with their corollaries of dyspepsia and gout, play a considerable part in the dismal wailings of these political scarecrows, who are apt to mistake the morbid promptings of a bilious habit for a spirit of prophecy.* England owes very little of her greatness to the respectable old gentlemen who sometimes affect to control her destinies, and who are really mere flies on the wheel of State: revolving, it is true, with the march of time, and vainly imagining that it is they who give the impetus.

The remoteness of the regions we have been describing, combined with the crass ignorance of geography in high places, has, fortunately, preserved them so far from the irritating meddling of a certain modern school of politicians who seem to derive

* The ancients are reputed to have practised divination by looking into the liver—a tribute to the important part it plays in human affairs.

vast satisfaction from thwarting the enterprising spirit of their countrymen in foreign lands, by endeavouring to apply everywhere certain wild and impracticable schemes of their own devising. These, if pushed to their legitimate extreme, would curtail the "Empire on which the sun never sets," into a fog-ridden group of islands, crowded with a starving and seditious pauper population, deprived of the means of defending themselves from the attacks of their foes, and quarrelling amongst themselves for the possession of "three acres and a cow."

According to these doctrinaires, British rule is the direst misfortune that can possibly befall a savage community—an influence so blighting in its effects, morally, socially, and commercially, that no efforts seem to be considered too great on the part of these eccentric persons to stave off so dire a calamity. The lugubrious croakings of these prophets of evil must sorely tax the patience of their audiences sometimes, but still they go on, and if they can only gather a disciple or two, their happiness is complete. Consumed with a sense of their own unworthiness, and total incapacity for ruling their fellow-men, they wax despondent over the future of the race, talk mournfully of the "crushing burdens of Empire," and take solace in depreciating English power and worth, and the labours of better men than themselves, who, with a strong faith in their own power of conquering difficulties, besides an enthusiastic belief in the great future opening out for the English race, in other lands, strive body and soul to conquer new fields for the superfluous energy of their fellow-countrymen at home. The very existence of such things as "foreign possessions" may be a standing offence to the fine moral feelings of these fashionable pessimists, who mistake their own flabby mental constitution and want of "grit" for "national characteristics." But the exceedingly flourishing condition of the Straits Settlements generally, and the robustness of Singapore in particular, give the lie to all who venture to question the advantages of British rule over a heterogeneous Eastern population. And, we may add, that the wider our rule is extended in these regions, the more rapid will be the development of their resources, the more prosperous and contented the populations, and the richer and stronger the British Empire by the addition of one more jewel to the Imperial Crown.

The Defence of Kahun.

A FORGOTTEN EPISODE OF THE FIRST AFGHAN WAR.

By CHARLES REYNOLDS WILLIAMS.

(Continued from page 565, Vol. XI.)

CHAPTER V.

THIS brings the Journal down to the 31st August, and in explanation of the obscure and excited entry of that day, as also to preserve a strict chronological account of the proceedings of the relieving force, I am compelled, for the present, to break off the Journal at that point and to take the reader back, in point of time, in order that I may make him acquainted with the operations of the detachment which, at that date, the Kahun garrison were so anxiously expecting. Here I must ask the indulgence of the reader to permit me to introduce to him my brother Alfred, who formed part of that force, and whose short life is identified with this narrative. He had passed through Addiscombe, on the nomination of the late Sir James Rivett Carnac, one of the Directors of the East India Company, with great credit, as first cadet for infantry, and was, on his arrival in Bombay, posted to the 2nd Grenadier Regiment. He was only nineteen years of age. On leaving England to embark for Bombay I accompanied him to Ryde, in the Isle of Wight, one Saturday in February 1840. We spent Sunday with an old Indian friend of ours, General Aitchison, and on the following Monday morning—a flat calm it was, and a genial, sunny day—we took a four-oared boat from Ryde and were pulled out to Spithead, where I saw him safe on board the *Thomas Coutts*, one of the East India Company's old tea-ships, in which Sir James Carnac had also taken his passage as the newly appointed Governor of Bombay.

I see the boy now before me, tall, handsome, dark, yet fresh-coloured, leaning over the gunwale of the ship and waving his farewell (a long and last farewell, alas!) to me as I slowly returned

in the shore-boat to Ryde. Soon after landing at Bombay he joined his regiment at Kurrachee, and I trust I shall not do injustice to the main narrative, or spoil its continuity, if I now weave into it the two following letters written by him to his mother, closely connected as these letters are with the events we are describing, and containing an heroic passage which may be taken as foreshadowing his own death by reference to that of Clarke.

“Camp, Kurrachee, 3rd June 1840.

“MY DEAREST MOTHER,

“The whole station, and in fact the whole army, are at present wrapped in melancholy and regret, on account of a most sad occurrence which happened to an officer of our regiment a few days ago; and when I give you the particulars I am sure you will participate in our sorrow. Walpole Clarke, the brother of our adjutant, was offered, just before I joined, the command of a troop of irregular horse at that time serving in Upper Soinde against the Beloochees. He was just the man for the service. Young, active as a deer, bold and courageous as a lion, good-tempered, witty, lively almost to boisterousness, generous and handsome! His figure was that of Hercules, six feet in height and supposed to be the strongest man in the army, and on horse-back he was a perfect centaur. Well, this model of a man very soon became the idol of his corps, with whom he used to perform the most surprising feats of valour. In fact, no one could resist the weight of a blow from his gigantic arm, and, having such indomitable courage to back it, no one could stand against him. The consequence was that he had so great a contempt for these fellows, by others considered so formidable, that he used to leave his men, spur his horse at the mass, cut his way through them and then back again. The number he killed with his own hand was quite incredible. His career was as short as it was brilliant, for a fortnight ago he was sent from the fort of Kahun with 156 infantry and 40 horse, to escort 600 camels and bring back provisions. Their first day's march was uninterrupted; so Clarke, fancying the others would be like it, sent back 76 infantry to Kahun, being unwilling to harass the men so much worked already. The next day, on their arrival at the middle of a tremendous pass, they descried about 2,000 Beloochees, who had lain hid until that moment, occupying the heights around them, so as to hem them in on every side. Clarke, however, was not by any means disconcerted, but, leaving his cavalry, who were useless on the hills, to guard the camels, he divided his little band into three detach-

ments, and, putting himself at the head of one, he charged up the hills around him. There they maintained their ground for about two hours, until their ammunition failed, when every man was cut to pieces, not one escaping. All died, as we hear from the horse-men who have arrived, like true soldiers, fighting to the last. Yesterday we heard that the seventy-six who were sent home were massacred to a man within four miles of Kahun. Poor Clarke's body is not to be found. Upon that we ground a hope that he has been carried into the hills to be ransomed. His poor brother is quite heart-broken, and the whole regiment participate most sincerely in his grief, so much was he beloved by both officers and men. In his death the regiment has sustained an irreparable loss, and the service one of the finest young men that ever entered it.

"I hear we go up there next year, or rather in a few months. If so, so great is the thirst for revenge burning amongst us, that I am afraid the first opportunity that presents itself will find our men more like infuriated tigers than human beings. I am hard at work at a survey of Kurrachee. My map will contain about 150 square miles. Captain Le Mesurier and I are working together. If we do not go up to Sukkur we are going to survey a place that no European has ever travelled over. Our route will be thus: striking directly North from Kurrachee, we shall travel 150 miles, then, taking an easterly direction, separate and survey the passes until we arrive at the longitude of Sommiyany, when we move towards that place, surveying the country about Himlaj, which only one European has ever visited (Hart, of ours). From thence we return by different roads to Kurrachee. If we do that, I think I shall be able to get my name up a little. Until next month, good-bye.

"Your affectionate Son,
ALFRED WILLIAMS."

The second letter to his mother is as follows:—

"Sukkur, July 30, 1840.

"MY DEAREST MOTHER,

"No sooner had I started my last letter from Kurrachee than the route came for us. Although we had some presentiment that the 2nd Grenadiers were destined to distinguish themselves among the hills, yet we never expected that we should so soon be turned out of our houses, in which we hoped that we should have been allowed two or three cool months of ease at least. The loss, however, of 250 shiners is nothing when compared to the pleasure we all feel at the prospect of a little active service.

"Before I give you an account of the march, I must let you into the secret why we have been so expeditiously roused out. In the first place, the most powerful and warlike of the tribes of Beloochees, Gilzees by name, having taken fright at something in the course of the treaty which was being contracted between them and the Company, declared war, and immediately commenced hostilities. Upon this, a detachment was sent to take possession of Kahun under Captain Brown of the 5th, accompanied by Clarke of our regiment with the Auxiliary Horse, a movement highly injudicious, as from the inclemency of the season no communication can be sustained between them and head-quarters. The result you must know. Kahun was occupied, and Clarke, poor fellow, after leaving Brown to garrison the fort, on returning was cut up by 2,000 of the enemy. Why I say 'poor fellow' I don't know; for, surely, to die adored by one's regiment, covered with laurels and fighting like a hero, is better than to go out by fever, or otherwise die in your bed. Even his enemies say that he was a 'Bura Bahadur,' meaning a perfect hero. The consequence of this is that the garrison are blockaded in such a way that not a man can leave or stir outside the walls. His provisions can only last till the end of August, and so, naturally, he is in an anxious state. Quetta, too, is so pressed that the officer in command says, unless reinforced, he must give way to numbers; and, lastly, Poolajee is expected to be attacked nightly by an overwhelming force which has been collected in its vicinity.

"Such is the state of affairs, or rather was, when the 2nd Grenadiers and five companies of Her Majesty's 40th were ordered to Sukkur. And now congratulate me. I no longer belong to a battalion, but to the light company! Fancy, such men! My eyes! not a man under 5 ft. 8 in. or above 5 ft. 9 in., the recent pick of the whole regiment. I am as proud of them as if they were my own children, and the advantage is, my dearest mother, that no laurels will be won without us. Think of that! and hope to see in the next *Gazette* your affectionate son as having gained the mural crown. Now mind you congratulate me in your next letter, and say you are glad to hear it. My Captain is in England and I shall have the command of them, which, when you come to think that there is not an individual among the number who, if properly led, will not charge the devil, is a most satisfactory idea.

"Well, to return. Soon after the news arrived to inform us of our not far distant departure, another despatch made its appearance intimating that two steamers were waiting our arrival at Tatta. Now two small vessels were not enough to transport the whole, so

the Major called me to his quarters and, after holding out for some time on the importance and responsibility of the charge, said that I should see myself in orders to proceed immediately in *command* (mind that) of 800 men, that is to say, three companies—the right flank, 5th, and light company.

“Never having had a command before, I assure you I felt somewhat nervous when, mounted on my new horse, I galloped on parade, and heard my own voice raised to such an astounding pitch. I almost fancied that my Arab, who is a most fiery gentleman, would take fright at the unusual sound which was issuing from its insane master. But no, nothing seemed to feel the circumstance but myself: and so we proceeded on our way. ‘The way was long,’ as Scott says, but as for wind there was none. I soon found out that it was not the season for marching, for the men, encumbered with knapsacks, pouches (each containing forty-eight cartridges), muskets, bayonets, lotas and havresacks, soon began to lag, and, notwithstanding we halted three or four times, when we reached the encampment more than one hundred were behind. It was, however, sixteen miles, and the first march.

“On arriving, how changed was the consequence of your dutiful son! My tent was crowded with native officers coming for orders, orderlies, and non-commissioned officers. I was at once transformed from ensign to major, and the other man, Jameson, who was with me, was ‘Chota,’ while I was ‘Bura’ Sahib. This was the only beauty of the expedition, for the thermometer stood at 115° in the tent, which was so full of dust that we did nothing but sneeze all day. My greatest grief was the loss of my dear old setter, who gave up the ghost the first march from Kurrachee. I was nearly crying when I saw my old companion die. I never saw a more game animal; he hunted till he died, poor old fellow!

“On our arrival at Tatta, we embarked the men and all their kit, and on the following morning I went on board myself. I say ‘we’ because at Hyderabad we took on board Franklin, who had been there in command of the Resident’s guard. The river itself is magnificent, grand in the extreme; I never saw anything like it, and am, therefore, at a loss to find words to describe it. The vast mass of dark, muddy waters rushes on in a way wonderful to behold; the rapids of St. Goar are sluggish when compared to the rushing volume of the Indus. In many places the banks cannot be descried, and the river assumes the appearance of the sea. Indeed, it goes by the name of the ‘Meeta Darya.’ Its surface is covered with men and women on chatty-pots, who in this way float from place to place. The native boats are tracked up by

men who, up to their necks in water, drag them along about a mile a day.

"Now that we have left Kurrachee, we are all saving what a nice place it was; certainly in comparison with this it was Paradise. We also had some very good fun there, which now affords many a laugh, and many a frolic after mess which used to end nearly in the guard-house. But in Sukkur there is no fun. What can you do with the thermometer at 125° in tents? If this is not a withering heat, what is? But the disgusting part is that in the evening, when other people are cool, we are at the hottest; the wind at that time is as if it came out of a burning fiery furnace.

"Major Newport has just marched out to Shikarpoor. He really is a plucky fellow. When everybody was saying that he would be obliged by the heat to come back, he replied, 'No, no; nothing but a *bond fide* fiery flame shall stop me.' He told me that if I would pass in six months, he would give me anything I liked—a horse, a tent, anything; but what I could do in one month in Bombay I could not do here in six; for, independent of the heat, the camels being 120 rupees renders it impossible to transport such heavy appendages as Hindostanee books. How I shall be able to get any at all, I don't know; for the Company, having been liberal enough to allow thirty rupees a month to keep up beasts of burthen whose keepers would consume that, think that her officers are quite off her hands.

"The Brigade at this place is a large one—the 1st Grenadiers, the 23rd, the 5th, the 2nd Grenadiers, five companies of the 40th, lots of Irregular Horse, and two troops of Artillery. We expect to take out 1,500 men to the hills; they say that is the maximum number that can exist in the hills. We all anticipate much pleasure from the trip; but, beyond a considerable expense and perhaps a loss of kit, no inconvenience or danger will be incurred. What is the reason you never say anything about my regiment in your letters? You ought to be as proud of it as if it were your daughter-in-law, for she is my bride, and a very pretty one she is! I am writing this long letter because the probability is that you will not receive many more for some months, as I believe we leave Sukkur soon.

"Sukkur is built on lime rocks, which get so hot towards the end of the day that they give out as much heat as the sun itself. The game is most plentiful all round, but nobody exposes themselves to the frizzling heat. We are all living in resuscitated tombs, which keep out the heat better than canvas. We must not, however, turn up our noses at tents, for few subalterns will be able

to take more than a *route*, with camels at such an exorbitant price. Besides they may be stolen the very first day. I think if I lose my kit I shall be supremely happy; it is a splendid idea not to have anything in the world to think of. I am close upon that already, so I can give you a pretty good opinion on the subject.

"My horse has just arrived in a boat from Tatta, which has put to rest one source of anxiety. You will probably say that I am extravagant in horses; but the fact is that I now ride nearly twelve stone, the consequence of which is natural—I must have a strong horse. My last was not; so, as I saw one to suit me selling at half its value, I bought him—the more necessary as he will have hard work soon. You will recognize him by the name of 'Cock Robin.' He is such a beauty! quite one to please a lady. Such a tail, mane, and head! such spirits and temper! and paces unequalled for appearance and freedom.

"The head-quarters of our regiment have not yet arrived; we expect them in about a week from this time. Everybody is looking forward to their arrival, as the band will be a great acquisition to our dulness. I hear they have lost a great many men on the march between Kurrachee and Tatta. The unhealthy season at that place will soon be commencing again. The 26th left it last year with 700 men sick, and only ten men ready for duty to guard the colours. They left dead about 200 men. When they were at Kurrachee they were a splendid body of men, quite complete; when they left it for Bombay they were a parcel of useless invalids.

"I have made lots of sketches since I have arrived here, chiefly figures and from life. Rochard's lessons have been invaluable to me. I am in great want of Chinese white. It is astonishing how few draw in this country, where there is so much subject, opportunity, and leisure.

"Your most loving Son,

"ALFRED WILLIAMS."

Have I transcribed these letters at too great length? The thought has occurred to me, whilst I have been so engaged, that I ought to have curtailed them, and that possibly my weakness may have blinded my judgment. But I could not bring myself to alter or suppress a single word, feeling sure they will find their way to the heart of the reader, who will himself decide whether, in this youth of nineteen, they do not breathe the spirit which animated his hero, Clarke, and furnish promise of a bright career had his life been prolonged.

CHAPTER VI.

THE force destined to relieve the beleaguered fort of Kahun assembled at Sukkur early in August. It consisted of 400 men of the 1st Grenadiers, 100 of the 2nd Grenadiers (the light company, including my brother), 200 Irregular Horse, and three guns, all under the command of Major Clibborn, of the 1st Grenadiers, with a convoy of upwards of 1,000 camels. They left Sukkur on the 12th August, and, toiling across the fiery desert, encamped on the 29th at the entrance to the pass of Surtoof.

The tragic incidents of the following days are best described in a letter written by Ensign Edward Fanning, of the 1st Grenadiers, on his return to Sukkur, to his father, as he himself witnessed them. The following is an extract from the letter, as given to us by Mr. Fanning:—

“Camp Sukkur, 25th September 1840.

“In my last letter I told you that I had volunteered to join my regiment previous to its marching on field service, and had been refused by the Brigadier. However, on the 12th August, a memorable day in my life, poor Honner, the adjutant of our regiment, was taken ill and unable to take the field. The commanding officer of our regiment, Major Clibborn, immediately applied for me, and accordingly, with only six hours' notice, I was ordered to receive charge of the Adjutant's office, and make ready to start that night. Accordingly, on the night of the 12th, a force consisting of 400 men 1st Grenadiers, 100 2nd Grenadiers, 200 Irregular Horse, and three guns, left Sukkur, our object being to bring the garrison of the Murree fort of Kahun back into the plains. After marching eight very long marches, we arrived at Poolajee, the village by which we were to enter the hills. On the night of the 23rd we left Poolajee, and started to the hills, and, after making six marches unmolested, we arrived at the foot of a tremendous mountain called Surtoof, the place where poor Clarke's party was cut up, and there pitched our camp for the day, the 29th August. Over this tremendous mountain there was a pass about a mile in length, of sheet rock, and up this we were to bring guns and a convoy of 1,100 camels. In every direction about the camp the remains of poor Clarke's disaster were visible by the clothes and bones of the unfortunate company of the 5th Regiment; the only way by which we could find out where poor Clarke met his fate was by seeing the remains of his Tartan trousers lying outside his grave.

“At 2 o'clock A.M. on the morning of the 30th we commenced

the ascent of this mountain pass, and, by the incessant exertions of the sepoy, the guns and convoy were dragged and conveyed to the halting-ground on the top by 6 o'clock P.M., through a burning sun. There was no water whatever here, except what the sepoy brought up in their skins and in their pots from the bottom of the mountain.

"Here we made a halt till 3 o'clock A.M. of the 31st, and during this short halt the enemy first showed themselves by their skirmishers firing upon our pickets. In consequence of this firing, the troops were under arms all night, and the men, therefore, got little rest after their labours of the previous day. At 3 o'clock A.M. we started on a good road, and as day dawned approached the range of mountains over which lay the route to Kahun. We could plainly observe that the heights were crowned by thousands of the enemy, who kept up a brisk fire on our men as they advanced to their ground. Immediately at the base of this range of mountains there are several ravines, and in one of these the labour of the men was greatly increased by the upsetting of one of the 12-pounder howitzers, limber and all. However, after great perseverance and labour, the advance of the convoy, consisting of 850 Infantry, with 50 Irregular Horse and two guns, arrived at the halting-ground. The guns were immediately placed in position to enfilade the summit of the pass in front of us, which rose in a zig-zag course up the side of the precipitous mountain. It was now about 10 o'clock A.M., and the heat fearfully oppressive. A letter had been received from Captain Brown, from Kahun, some days before, reporting that a great deal of rain had fallen, and that we were pretty sure of finding plenty of water; but, to our horror, we found none, and the little the men had brought up from the bottom of Surtoof was exhausted long before. The men had, therefore, little or no water, many of them since the evening of the 29th.

"Under these circumstances, it was evident that both men and cattle must perish from thirst unless the mountain pass were carried, beyond which water was said to be procurable, and the fort of Kahun distant about six miles.

"We waited anxiously till 1 o'clock P.M. for the arrival of the rear-guard, consisting of the remainder of the force, under Captain Heighington, of our regiment. About 2 o'clock P.M. the dispositions for attacking the pass were made, and the left flank companies of the 1st and 2nd Grenadiers were appointed as the storming-party, supported by the remaining divisions, leaving the colours of our regiment under charge of two strong companies. I was ordered to the front with two companies, there being few European officers,

and my duty was to keep the heights clear whilst the storming-party were ascending. During the time I was forming my men so as to open fire we were fearfully knocked over by the enemy's musketry, and it was a merciful Providence that spared my life, as the man on my right was shot before we could return a volley. I at last opened a heavy fire, as also did the guns, and the heights were soon cleared.

"The storming-party, commanded by Captain Raitt, of our regiment, was then by him led on with admirable coolness and order. As they ascended, the road became excessively difficult, at times admitting of only a single file, and as they neared the top they found breastworks of stones, surmounted by thorn-bushes, built across the road. It was getting over one of these that poor young Williams, brother of Monier Williams, and who was at Addiscombe with me a term, was shot through the heart. When he was raised up his head fell forward upon his breast, quite dead. It might be some satisfaction to his unhappy mother to know that he was not butchered, as all those were, or at least most of them, who subsequently fell, and, should you think proper, you might let her know it, as coming from one who saw him fall. He was picked off by a single shot, not in any *melée*. I mention this, because I well know what reports get afloat. He was a great favourite, you may say beloved by all who knew him. I hardly ever felt anything like the moment when I saw he was no more!

"Raitt, shortly afterwards, was shot through the thigh. He quietly turned round to Franklin, who commanded the left company 2nd Grenadiers, of which poor Williams was subaltern, and said, 'Franklin, I am shot; lead my company whilst I bind up my wound with my handkerchief.' He was soon again at the head of his company. All the breastworks had been surmounted, the ledge at the head of the pass was gained, and the men were preparing for the rush, when a dense mass of the enemy, as it seemed by signal, rose from behind the crest of the mountain and completely overwhelmed the storming-party with showers of stones and with musketry, whilst others fell on them with their sabres, committing fearful havoc on the retreating sepoys.

"During this rush poor Raitt and Moore of our regiment, and Franklin of the 2nd Grenadiers, lost their lives. The 'retreat' was immediately sounded for the support of the guns and colours, so I accordingly doubled back to the colours. We were, however, too late; hundreds of the enemy were within twenty yards of us, so we had no time to form or manœuvre. The colours were moved quickly to the gun, and the word 'rallying square round the gun'

was immediately given. The square was quickly formed, and the hard fighting now commenced. They were on all sides of us, dashing large stones into the square, and many closing and fighting sword to bayonet. Our wounded and dying were all in the middle of the square raving mad from thirst.

"We fought in this way for twenty minutes, making a complete circle of dead men about five yards from our bayonets. Our ammunition was now nearly expended, not above four rounds left in each man's pouch; however, the fire on our side was so heavy, and our volleys of grape-shot, beautifully directed by Captain Stamford of the Artillery, blowing them away from the muzzle of the gun, killing thirty in one round, had such an effect upon them that they all made for the hill again, having succeeded in carrying off the greater part of the convoy during the action. All our camel-men and palanquin-bearers for the sick had absconded, so we were left perfectly helpless.

"The scene that ensued after the action baffles all description. The cries for 'Water! water!' and the intense heat, the groans of the wounded and dying, as well as the inevitable death that stared us all in the face unless water were speedily procured, gave rise to the most dreadful scenes. One of our guides shortly afterwards came up and reported that water had been discovered about half a mile distant, so all the camels remaining, as well as the Government and officers' horses, were sent off immediately to bring the water. We waited anxiously till sunset for the return of the water-party, when some stragglers shortly arrived, reporting that the party had been surrounded and cut to pieces!

"It now became necessary to determine what was to be done. We had already lost 179 men out of our small force, and upwards of 200 followers, and the remainder were perfectly helpless from exhaustion and thirst, and, to add to our difficulties, all the flour, commissariat, and tents, officers' and men's, had been carried off. In this state we found it impossible, supposing we attempted another attack upon the hill, to be able to convey the guns over it. So poor Clibborn called us all together and, after mature deliberation, said he thought it impossible to carry out the object of the convoy, namely, the relief of Captain Brown. The dreadful alternative, the abandonment of the unfortunate garrison of Kahun, was decided on. We therefore, at 10 o'clock at night, made a rapid retreat to the water at the bottom of the Surtoof mountain, distant about nine miles, leaving many wounded men on the ground for want of sick-carriage.

"On reaching the top of the Surtoof mountain, or, at least, the

commencement of the descent, our rear was again attacked, and we lost every atom of the convoy; the men, being quite helpless, were an easy prey to the enemy. Our only chance now was to make for the plains as speedily as possible. The officers were fairly knocked up, and two out of the number on the verge of their graves. The men kept falling dead by the road-side. We reached Poolajee in two days and two nights from the hill (it took us eight days to go there). Upon our arrival at Poolajee, poor Heighington died of fatigue. Recollect we were without food or tents and in a burning sun for two days. We arrived at Poolajee about 10 o'clock at night on the 2nd September, with only twenty men with the colours of the regiment; the remainder straggled in during the night.

"When, on the morning of the 3rd, I was ordered, as Adjutant, to go and call the roll, the poor men could not stand in the ranks, and nearly every man had good honest tears rolling down his cheeks. In a sepoy regiment there are always a great many relations, and these poor fellows had lost fathers, brothers, sons, and many of their near relations. We stopped some time at Poolajee to rest the men, and then continued our march to Sukkur, where we arrived on the 20th, having left behind us five out of thirteen officers, and about 190 of our unfortunate men!

"This was a harder battle than Ghuznee or Khelat; we lost three times the number of both of them put together. I have been laid up with fever since my arrival. I lasted out the fatigue wonderfully well; better, perhaps, than any of them. It is, however, telling on me now; fever is the order of the day. Our regiment is, of course, practically disorganised. All official papers and documents are gone, as well as upwards of twenty-two thousand rupees. I have lost everything on earth, except what I had on in the action."

The guns were spiked and abandoned. Nothing else can be added to this letter. It was written five days only after the return of the shattered remnant of the force to Sukkur, and speaks for itself, as only a letter can do when written by an eye-witness of the scene at the time.

CHAPTER VII.

No wonder that Captain Lewis Brown should have entered in his Journal, under date of the 31st August, "A day of great and almost overpowering excitement!" Shut up in the fort, he could hear the sound of the guns and see the shrapnel bursting in the midst of the enemy, but could know nothing of the repulse or of

the extent of the disaster. Then "All was silent for the rest of the night" was his sole ground for conjecture. Where were the relieving force? Why did they not come on? What had become of them? What could be the cause of that strange and dreadful silence? As hour after hour, day after day, passed with no visible sign of the convoy, he consoled himself, or tried to console himself, with the hope that it was coming round by the other and longer road, finding the Nuffoosk pass too difficult. Eight days passed in that expectation, every day adding to the anxiety as it lessened the probability of the hope. Such a state of suspense would appear to have been almost insupportable, yet the garrison met it without flinching, without even a murmur!

I now return, in proper order of sequence, to the Journal:—

"*September 1st.*—Not a single Beloochee to be seen on the top of the hill at daylight, but several passing across the plain in that direction. No sight or sound of convoy all day! Sadly perplexed to know what has become of them. Conclude that, finding the pass too strongly defended yesterday, they had fallen back to go round by the Deeyrah road, as I first recommended.

"*2nd.*—Beloochees in all directions and as busy as bees. Another day of suspense and excitement. After 11 o'clock they pitched one of our sepoy's tents about halfway up the hill, up and down which batches of loaded and unloaded camels are going. Suppose the convoy must have dropped some of their baggage and stores in the hurry of their departure. About 12 o'clock much firing commenced, and continued with intervals until 2 P.M. From the sound, it would appear the convoy had fallen back in the direction of the Deeyrah road, some twenty miles. Cannot now expect to see them for the next six or seven days—tantalizing, when they were so close. Not a drop of spirits, a cheroot, or a cup of tea left, nor have we tasted any for some time. Sepoys very weak from short rations, only six bags of flour left—a bad look-out. Cannot help thinking of our having got our convoy over so snugly in May, when we had only a third of the number of the present convoy.

"*3rd.*—Still in suspense. No communication from outside; all on the look-out, particularly at night. Upwards of one hundred loaded camels going across the plain, some distance off. Whether these are horses or camels cannot be clearly ascertained without a glass; persuaded the people in the fort that they were the former, although the sepoy's made the shrewd remark that they never saw horsemen look so large, or go along one after the other so regularly. About twenty horsemen, with eight or ten spare horses,

came down from the hill to water near the fort; looks as if the owners of the latter had been killed. Two bodies carried across the plain on charpoys, with a kind of funeral-party following them; suppose they are two chiefs. At 3 P.M. saw a large body of Beloochees pitching a sort of camp within a mile and a half of the fort. No mistaking our sepoy's tents, also one officers' tent; five of the former and one of the latter, exactly the number they took from Clarke's party. Trust they are those only, but appearances are very suspicious. Just as it was getting dark, saw the whole body assembled in one dense mass in front of their tents; warned all hands to keep a bright look-out when the moon goes down.

"4th.—To-day some horsemen came and informed us 'that they had cut up our convoy, taken the guns and all the stores and supplies, and had killed all the Sahib-log except three, who were prisoners in their camp'; in proof of which assertion they offered to show the guns to any person I chose to send, who would also bring a chit from the prisoners. This offer, however, I refused, firmly believing the report to be altogether untrue, and made with a view of getting hold of one of my people for information. They also said that if I would leave the fort and go to the plains, they would not molest me. We had a very heavy fall of rain about 4 P.M. More tents springing up in the Murree camp; about three hundred Beloochees seated on a rising ground on one flank; great amusement in watching their movements; having a good glass, we could almost see into their very tents.

"5th.—A person came under the fort calling out, wishing to give us the news. Had had already quite enough of these people's stories, so sent a bullet or two after him to hurry his departure. All in the fort sadly perplexed to know what to think of affairs. Beloochees on the move in every direction; 100 passed this morning in the Deeyrah direction, the road from which we are expecting the convoy. The Beloochees do not seem in good spirits; not like men who have destroyed a large convoy; there has evidently been mischief somewhere. A storm occurred about 4 o'clock, which, to our great delight, blew down all the Beloochee tents; they, however, soon had them up again.

"6th.—No grain left for camels or bullocks, and little or no forage; they must take their chance, poor creatures! Nothing now left but a few bags of rice, and three or four of flour. Ten bags of the latter, which were thrown aside as being half sand, now came into use and were greedily devoured by the sepoy's. A camel-man shot himself, being detected in a theft.

"7th.—Half expected, on taking a look at the Beloochee camp

this morning, to find them all decamped ; but a sad reverse met our sight—the three guns belonging to the convoy staring us in the face ! They are placed on a piece of rising ground on one flank of their camp, their muzzles pointed towards the fort. What can have become of Major Clibborn and his convoy ? Many officers and men must have lost their lives before they gave up the guns ! There is no doubt now that something most disastrous must have happened, and we must prepare for the worst. Sepoys keep up their spirits amazingly well, not the slightest sign of flinching, although they seem to be aware that their situation is rather perilous ; luckily, they cannot see the guns with the naked eye, on account of the jungle. There are chances in our favour yet, and that the guns will not be of much use to them—first, they may be spiked ; secondly, they may have no ammunition ; and lastly, they know not how to load or fire them. Luckily, they are howitzers instead of field-pieces. 10 A.M.—All the Beloochees are assembled round the guns and peeping into their muzzles ; quite playthings to them.

“ 8½h.—Small parties of horsemen prowling all round the fort, watching us, I suppose, knowing we must soon take to flight for want of provisions. They need not be in such a hurry, as we have still some rice and gun-bullocks left.

“ 9½h.—Loaded camels still going across the plain. Two Beloochees mounted on artillery horses ; no mistaking them, from their size and their having blinkers on, which they determined should not escape our sight, as they galloped up and down in front of the fort for an hour.

“ 10½h.—Our old friend Sheer Bheg came in this morning, but in such a suspicious manner, that I put him prisoner. He tells us the Beloochees' report of having destroyed our convoy is all true. He mentions poor Raitt and Moore as being two of the killed.

“ 11½h.—Made some horsemen, who were grazing their horses rather too close, scamper off, and received much abuse from them for my pains. The Murrees acknowledge to their having had eighty killed and eighty wounded in the fight. Our old acquaintance Hybutt Khan and his son are, it is stated, both killed ; also Kurream Khan, who superintended the slaughter on the 29th of June.

“ 12½h.—Saw a very pleasing sight this morning—nothing more or less than the Murrees moving away the guns ; they appear to be taking them to pieces and away. This looks very much like a bolt on their part ; perhaps they have got intelligence of another

convoy coming up. Beloochees rather quiet; allowed two camel-men to loot them of three mares out grazing. 160 killed and badly wounded will make a hole in their tribe.

"13th.—About 1 A.M. a great noise and many fires in the direction of the Murree camp. At daylight not a single tent to be seen, and our eyes are no longer made sore by the sight of the convoy's guns. Everyone delighted beyond measure; this is quite a reprieve.

"14th.—Sent off Sheer Bheg with a message to Major Clibborn that we were all well in the fort. This is the first opportunity that has offered of sending anything in the shape of a letter since the 26th ultimo. Captured two camels this morning with the C. D. mark fresh upon them. No doubt from whence they came! Feel the want of a drop of spirits or a cup of tea most sadly when keeping watch at night. Water (and such water, too!) is but cold comfort.

"17th.—About 12 o'clock last night a cossid arrived with an official letter from the Brigade-Major at Sukkur, informing us of the full particulars of Major Clibborn's disaster, and leaving me to my own resources, it being found impossible to send me any further relief."

Here I pause in the Journal to interpolate the Brigade-Major's letter, which is as follows:—

"To CAPTAIN L. BROWN, Commanding Kahun.

"SIR,

"'Ere this letter reaches you, if it ever should reach, you will probably have heard of the sad and disastrous misfortune that has befallen the detachment under the command of Major Clibborn, 1st Grenadier Regiment, which was despatched for the purpose of relieving your worn-out men, and throwing a new garrison into Kahun with provisions for two months. At the pass of Nuffoosk, on the 31st ultimo, after some hours spent in desperate attempts to crown the heights, and after severe fighting till noon, after hours of patient perseverance against raging thirst from the want of water, and the utmost efforts of men determined to carry out the objects for which they were destined, and the loss of four officers killed and one severely wounded, Major Clibborn, with the only chance of saving the remnant of his enfeebled troops by falling back for water, was under the painful necessity of deciding on the abandonment of your brave detachment in Kahun. Under these circumstances, I am directed by Major Forbes to state that all attempts to relieve you have failed—there are neither troops, followers, or supplies or carriage for another expedition in your favour; and being under the painful necessity of leaving you, after having done all in

his power, to your own resources. Your post has become untenable, and he begs you to act in any way—either by a rapid night-march, or, if so fortunate, by making any terms you can possibly conclude with the enemy. He begs you to act for yourself in the best way you can possibly manage, and he fully authorises any agreement or arrangement that may enable you to bring your detachment and your companies safely to the plains.

“I have, &c.,

“Camp, Sukkur,

“J. Down, Brigade-Major.

“7 September, 1840.”

After the receipt of this letter, the Journal continues, under date of the 17th September, as follows:—

“Well, this decides the matter at once. The number of sick, and the weakly state of the rest of the detachment, give little chance of escape by a night-march, and I do not suppose the Murrees will agree to any terms I may offer. Put the best face we could on the matter, and, on making a calculation, find we can last out until the 15th October on quarter rations and the gun-bullocks. Decided on holding out unless we get honourable terms. Perhaps something will turn up in the meantime; and if it comes to the worst, we must try and make our way down to the plains. Replied to the Brigade-Major in conformity with decision, not allowing the cossid to enter into the fort, knowing he would not have the most cheering news for the people inside. Sepoys in excellent spirits, although well aware that there is some mischief in the wind. From this to the 22nd instant nothing extraordinary occurred.

“23rd.—Sheer Bheg returned from the plains to-day, but without any reply to my letter, having had it taken from him. He tells me that ‘Dodah sent twice to him immediately after the fight, knowing he had access to the fort, to say he should be happy to make any terms with me as long as I would leave his fort; and that he had sent two people to me, but that I would not listen to them, firing upon and driving them away.’ The Belooch who came on the 5th, and whom we treated so roughly, must have been one of these peaceable messengers. Well, this seems an opening for obtaining favourable terms, particularly as old Dodah has made the first advances; and, knowing the impossibility of holding the post much longer for want of supplies, I opened a communication with the Chief, Sheer Bheg and my Naib being the bearers of the following proposal:—

“‘Dodah Murree, I’ll give you back your fort on conditions,

viz. that you give me personal security for my safe arrival in the plains. If not, I will remain here two months longer, having provisions for that time.' "

CHAPTER VIII.

BEFORE giving the reply to the above proposal, and continuing the Journal, it may here be remarked, by way of prelude to what follows, that if Captain Lewis Brown had ever thought of abandoning Kahun he might with equal safety have secured an earlier retreat. But he appears to have felt that it did not lie with him to determine whether or not the fort should be given up. He had been appointed to hold Kahun, and hold it he would. He never for a moment thought of retreat till ordered by the Brigade Major's letter of the 7th September to retire as he best could. His message to Major Clibborn on the 14th, when the garrison were nearly *in extremis*, "All well in the fort," has found an echo and a striking parallel in the now celebrated message, under similar circumstances, of "Khartoum all right." Even when the order came that he was at liberty to act for himself and make the best of his way down to the plains, he hesitated to do so. The particulars of his retreat are so singular and interesting that they read like a romance.

The treaty by which the retreat of the beleaguered garrison was secured having once been arranged, nothing could be more strict or chivalrous than the manner in which its terms were adhered to, until the safe arrival of the party at Poolajee. The most civilised nation in the world could not have acted a nobler part than the Murrees did from the time Kahun was abandoned until the arrival of its garrison in the plains.

Not to anticipate further, I continue the Journal as follows:—

"24th September.—The Deputation returned, informing me that, on receiving the communication (*i.e.* the letter to Dodah Murree, which concluded the last chapter) the whole of the chiefs had assembled together, and, after some consideration, took a solemn oath on the Koran that if I would leave the fort in three days they would protect me from all opposition down to the plains, ending by saying that 'Whatever my wishes were should be their law.' Two hours afterwards a cossid brought a letter from Dodah himself, in answer to mine, containing an agreement on oath to my proposal. He said he would send his nephew to pay his respects to me, and to see the agreement conformed to by all his people.

"25th.—Replied to Dodah's letter to the effect that I would give up the fort three days hence on the above terms. Surprised at

their letting us off so easily; namely, simply to return to the plains without let or hindrance from his people on condition of giving up the fort, which Dodah must well know we cannot hold a month longer. Plenty of room to suspect treachery, but we must run the risk. This evening Guamaul Khan came near the fort and sent a message to say that he feared to venture inside, but that if I would meet him outside without my troops he would ratify the agreement. Wishing at once to see whether it was to be treachery or no treachery, I agreed, and with Erskine and four native officers met him about a mile from the fort. I never saw a man in such a fright in my life. Although he had thirty horsemen armed to the teeth, and there were only six of us, he retreated twice before he would venture near us! He thought, from our coming alone, there must be treachery; that some men were hidden somewhere; even after we had met he had his horse all ready close by for a start. Down we all sat in a circle; a wild scene! His followers appeared to be exceedingly well-armed, and all fine, stout-built men. After compliments, &c., the nephew began to talk very reasonably. He expressed a hope 'that there would now be a lasting peace between his tribe and the British; that they had only fought at the Nuffoosk pass to save their country and their lives; that it was the least they could do when they had the fate of Bejah Khan staring them in the face; that they had never killed any of our people after the fight, and that all the prisoners had been fed, clothed, and set free.' He concluded by saying 'that he should remain near the fort till we left, to prevent any disturbances between his people and mine, and that he would furnish me with trustworthy guides down.' There was not the slightest appearance of treachery. Thus ended this most interesting conference. It will not, I think, be easily forgotten by either Erskine or myself; so much depended on it, the fate of ourselves and the whole of the detachment. We found these Beloochees the most civil and polite of men; the confidence we placed in their word by meeting them, in the way we did, seemed to please them much; and from having been deadly enemies for five long months, we became, in one hour, the best of friends. No doubt their joy was just as great in getting rid of us as ours was in obtaining our freedom.

"*26th and 27th.*—Most delightfully employed in preparing for our start. Only ten public camels left, and those as thin as rats. None here procurable. The number of sick amounts to forty, and these require twenty! Then there are the rations, ammunition, both gun and musket, water and tents. In fact, I found I could

not move without sacrificing *all* private property and half the ammunition and tents. Obligated to call on officers and men to give up what private camels they had; this was most willingly agreed to; and all kit, even to our bedding, was left behind. The gun ammunition I was obliged to take, as I rather expected opposition from the Boogtees, through whose country we had forty miles to go. At first we were almost afraid we should not be able to bring down the gun, from the wretched state of the bullocks and the weakness of the men. However, we determined to try, and, leaving the waggon and forge-cart behind, picked out thirty of the best for the gun alone. The sepoy, thinking we were going to leave it behind, came and begged me not, as they themselves would drag it down and defend it with their lives! When Erskine was burning the forge-cart and waggon the Beloochees outside thought we were setting fire to the fort, and sent to beg us to spare it.

"28th.—Turned our backs on Kahun this morning at 2 o'clock. Much trouble in getting off, in consequence of the number of the sick; obliged to tie some of the poor fellows to the camels. Commenced the ascent of the big hill at 6 o'clock, and, after immense fatigue and labour, got the gun to the top by 2 P.M. The sepoy were regularly overpowered with fatigue halfway up; the call for water now was dreadful, all that I had brought with me in the knapsacks being expended. About 9 o'clock about 300 Beloochees had assembled in our front, near the right flank, perched on the top of the hills; they seemed highly amused at our getting the gun up; but, when they saw the sepoy completely done up with thirst and fatigue, they called out, 'Ah! you will never get the gun down to the plains, you had better give it to old Dodah.' I offered them money to show us some water; they said they would for 1,000 rupees! After some talk they agreed to show us some for 100 rupees, which was immediately given; there was just enough to give each man a handful or so, and then they set to and got the gun up. I really thought, at one time, we must have left it behind. At the very top of the pass were about fifty of Hybutt Khan's followers; these men swore we should not go any further until we had paid for the flock of sheep we captured on the 13th August. However, when it came to the point, and seeing the gun too close to be pleasant, they thought better of it, and begged a few rupees for Hybutt Khan's family, who, they said, were very poor. It was as much as I could do to restrain myself from giving this party a round of grape; it is well I did not, perhaps, as it would most likely have embroiled me with the rest of the

tribe, and my detachment was not in much of a fighting condition! It was now 4 P.M., and we had still to descend the Nuffoosk pass, to some water which our Murree guides reported was in abundance three miles from the bottom, in consequence of much rain having fallen. Commenced descending, when a spectacle the most horrible to be conceived met our sight. The bodies of all our poor fellows, both officers and men, who fell on the 31st August, lying unburied, with all their clothes on! having been merely dragged off the road. Raitt's body was first, being almost on the top of the pass. Through this dreadful scene we had to lower our gun down the hill, inch by inch. I would have given the world to have buried the poor fellows, but this was out of the question; we had then been fourteen hours under arms, and had still to seek for water, besides which we had no intrenching tools. The bodies were lying in heaps, which shows what a bitter fight it must have been. The Murrees spoke highly of poor Raitt's bravery in being at the head of all. They had buried all their own dead at the bottom of the hill; but, although I offered them any money they chose to ask, they refused to bury ours, in consequence of the state of decomposition they were in. After much labour got the gun down the hill, and proceeded on along the table-land until 7 o'clock, when we found water in abundance in a deep water-course, on the banks of which we bivouacked for the night. Although the men had had no food all day, they all (save the pickets) immediately fell asleep without tasting a bit. They had been under arms nineteen hours, the first bugle having been sounded at twelve last night. Had this water been found when the fight of the 31st took place, what a different tale would have been told!

" 29th.—Marched this morning from the top of the Surtoof mountain, four miles; descended hill, lowering gun down with drag ropes. Reached bottom at 10 o'clock. On examining one of the gun-wheels found the ironwork of the axletree box split in several places; to all appearance it seemed impossible to repair it, or that the gun could travel any further; but Erskine, by great exertions, got it bound up, and we went on again, starting at 2 P.M., but did not reach our ground until 10, having lost the road and got jammed in between ravines. I should have wished to have made only one march a day, in consequence of the weak state of the men; but there was no help for it, on we must go, night as well as day, having only two days' provisions with us. Here no water was procurable; luckily the sepoy were so done up that they soon fell asleep, and forgot all about their thirst. Received an express from the Assistant Political Agent, warning us to expect opposition

from the Boogtees, in whose country we are now ; not in much of a fighting train, half the men being on camels, but, with the gun, I think we have not much to fear from them.

"*30th.*—Started at 5 A.M. and arrived at 10 at a beautiful stream of water. On this march I was obliged to throw away all the ammunition save a few rounds of grape, otherwise I must have left eight or ten sick behind. Men and camels regularly gave in during this march ; and how we all got safe up, I hardly know. Remaining with the rear-guard, I cheered them on as well as I could. One poor fellow died on the camel's back. Our Murree guide, who had behaved as yet very well, did an act of extraordinary kindness (for a Beloochee) ; hearing that one of our people was left behind for want of carriage to bring him on, he went back of his own accord, mounted him on his horse and brought him into camp, walking himself by his side. From this ground sent off an express by our Murree guide (the only man who would venture) to Poolajee for some spare camels and gun-bullocks, and we proceeded on another eight miles at 4 A.M., getting to some water about 10 o'clock.

"*October 1st.*—Started at 3 A.M. and marched on eight miles. Soon after our arrival, to our great delight, up came our Murree guide with some Scinde Horse, spare camels, and gun-bullocks. Proceeded on to Poolajee at 4 P.M., reaching that post at 12, distance fourteen miles. On coming out of the hills into the plain, fired off our howitzer to give notice to our friends at Lehree, the head-quarters of the 5th Regiment, of our safe arrival.

"Thus, after a detention of five months in the fort of Kahun, was our escape from that position and the Murree hills accomplished. The hardships and privations circumstances forced upon us were most cheerfully borne with by all. After the attack on Major Clibborn's party it often appeared impossible to expect a release, yet not a murmur was heard. On no one occasion had I to find fault with the men ; and the alacrity and cheerfulness with which they performed the exceedingly onerous duties which I was forced to exact, reflects, in my humble opinion, great credit on the Kalee (5th) Pultan and small detachment of artillery. Of the constant aid afforded me on every occasion by Lieutenant Erskine, and Dr. Glasse I *note* nothing ; it can never cease to be fresh in my memory, and their rank is too near my own to admit of my saying all I could wish, or they deserve, even in this my private Journal."

Thus ends, in an appropriate manner, this most interesting Journal. But, as connected with some of the incidents referred to in it, and especially as additional proof that the Murree tribe were

not wanting in the chivalrous feeling common everywhere to war-like natures, it should be added that shortly after Captain Lewis Brown's safe return he communicated with one of the chiefs, Mendoo Khan, and with that chief's assistance succeeded in getting all the brave men who were killed in the fight at Nuffoosk, on the 31st August, buried in the ground on which they fell, being assisted in that duty by some of the Murrees who were actually engaged in the fight. In further proof of the same chivalrous quality, my brother's sword was found by his side after the engagement, by the son of the chief Dodah, and was by him brought to Colonel French, then at Lehree, as a tribute of the man's respect for his enemies. Colonel French sent me the sword accompanied by a letter, from which the following is an extract:—"I was on outpost duty at Lehree, in Cutchee, near the Murree Hills soon after the defeat of Major Clibborn's force, and frequently had the wandering bards of the country to chaunt of an evening their historical ballads. They extemporised and introduced the names of those who fell at Nuffoosk and Surtoof, and with great praise of their gallantry; that of your brother, as 'chota' (or youthful) was a theme in itself, and the occasion was not lost by the bards of referring to his youth and yet his courage. But the sword was given to me by the son of the chief who defeated us, Dodah Murree, and he took occasion to speak of the courage displayed by all on the Nuffoosk field." The sword is now a valued treasure in my possession.

Many other letters were received by us from friends in India, after the occurrence of these events, but they are too personal to interest the general reader. One, however, I may venture to transcribe, from Major Clibborn himself to Mr. Farish, then in Council in Bombay, and afterwards forwarded by Mr. Farish to us in England. It is as follows:—

"It has been the custom of everybody to call our enemies barbarians, truculent rascals, &c. The Murrees are not only a fine race of mountaineers, but they are a brave and gallant enemy; and their conduct to Brown (of whose safe arrival you will have heard) should raise them in the estimation of everyone. The repulse that my men sustained must have fallen alike on Europeans, for even French armies in the Tyrol have been destroyed by showers of rocks and stones from an unseen enemy; and their gallant rush on our main body and guns was as dashing and formidable an affair as our sepoy have ever had to contend against. I had almost forgotten to speak of poor young Williams of the 2nd Grenadiers. He was a general favourite with everybody. I saw

him dozing in the shade of a dooly—for no tree was to be found on the bare ground of our battle-field; he looked the picture of youth and freshness, with his rosy cheeks. Half-an-hour after he was with his company advancing gallantly up the *wall*, I may almost call it, of Nuffoosk to the attack. He was shot through the heart, almost one of the first, on coming under the fire of the enemy, on the crest of the mountain, near the top, and fell dead. Poor Franklin held him up for a moment or two, but found he was dead; and poor Franklin himself was killed soon after in the *melée*. You may judge of the steepness of the ascent by the circumstance that anyone getting off the track was obliged to crawl on hands and knees."

To Captain Lewis Brown, to Lieutenant Erskine, and Dr. Glasse, and to their companions in arms, was accorded the full meed of praise by the Bombay Government. The Governor in Council, by a General Order, issued in March 1841, declared that, "in order to testify his admiration of the gallantry, prudence, and perseverance which distinguished Captain Brown in the defence of Kahun, and the fidelity and bravery of the officers and men under his command, the 5th Regiment Native Infantry should be permitted to have 'Kahun' inscribed on their colours and borne on their appointments."

It is to tell the story of that defence to congenial spirits of the present generation that, recalling many mournful memories, I have collected the foregoing facts and endeavoured to place them, in all simplicity, before the reader.

The French Conquest of Algeria.

By Lieut.-Colonel H. HILDYARD.

ALGIERS had been long known as a stronghold forming a protection to the pirates who infested the North African coast. The place had been thrice bombarded during the reign of Louis XIV.; but the wholesome impression produced by these acts wore off with time, and came to be entirely forgotten. In the year 1827, the Government of Charles X. protested to the Dey Hussein against the constant violation of commercial privileges guaranteed by treaty; but their representations were received with contumely, and the French consul was grossly insulted at an official audience.

This was followed, shortly afterwards, by the burning of the French establishment at La Calle, near Bona, and war became inevitable. A squadron was promptly fitted out at Toulon, and despatched to the coast of Algiers, in the expectation that the Dey would be brought to reason by a blockade. This expectation, however, proved to be erroneous, and, in 1829, a French line-of-battle ship which entered the anchorage of Algiers, with a flag of truce, was fired on. This insult to the flag put an end to the temporising measures previously adopted, and it was decided to despatch a fleet, having on board a military force, to obtain satisfaction, and destroy the stronghold of the pirates.

Little was, at that time, known of the country, and that little was confined to the littoral, which extended for over two hundred leagues, generally ill-adapted for the purposes of an expedition, possessing, as it did, only two safe anchorages, viz. those of Bougie and Mers-el-Kebir, near Oran.

Neither of these was suitable as a base of operations on account of the distance of either from Algiers, which formed the objective; and it was determined to make use of one of the bays which form

the peninsula of Sidi Ferruch, in close proximity to the capital, and which had been surveyed by a French officer many years before. The expedition was fitted, by its proportions, to bring the operations to an early conclusion, and to make it evident from the first that such resistance as the Dey could offer to the French arms must be in vain. The force embarked consisted of over thirty thousand men and 116 guns, under the command of Lieutenant-General Count de Bourmont. The flotilla was composed of a squadron of 102 vessels of war, commanded by Vice-Admiral Duperré, convoying 484 transports and freight ships. The army was divided into three divisions, having amongst their officers many of those who had taken part in the wars of the Revolution, as well as younger men who now took the field for the first time, but whose names subsequently came to be distinguished both on African and European fields. Such were Baraguay d'Hilliers, Vaillant, Péliissier, Changarnier, de MacMahon, and de Lamoricière.

On the 25th May the numerous flotilla set sail from the Toulon roads, and the African coast was sighted five days later; but a violent storm precluded a nearer approach to it until the 19th June. On that day all the vessels brought up in the Sidi-Ferruch anchorage, and on the following morning—the anniversary of Friedland and Marengo—the disembarkation of the troops was effected without opposition.

The advance of the troops first landed to occupy the isthmus was disturbed by the Arabs, who swept down and inflicted a loss of over three hundred men to the advanced battalions, which were at first disconcerted by the rapid movements of the Arab horse. The peninsula was, however, completely occupied, and an extensive entrenched camp formed to serve as a base of operations for further movements, the whole of which was protected by a continuous line of earthworks.

On the 16th June a sudden and violent storm from the north-west threatened to disperse the flotilla, which must have put to sea had it continued, and the incident proved the danger of operations on the open shores of this coast.

The enemy, to the number of from forty to fifty thousand, occupied the sandy plateau intervening between the French camp and the town of Algiers, their advanced posts being placed on a line of hills at no great distance from the French outposts. At daylight on the 19th, having approached under cover of the night, they made a determined attack on the positions occupied by the French troops. The fighting which ensued lasted several hours.

and was at times of a desperate nature; but the Arabs were eventually forced to fall back, after suffering a loss of about five thousand men. The French loss amounted to as many hundreds, and they gained entire possession of the enemy's camp.

This defeat suffered at the hands of the infidels, whose disembarkation had not been opposed because of the confident belief of the Dey that they were marching to assured destruction, was a great blow to him and seriously affected the spirit of his troops. But in the absence of a siege-train, which had not at that time arrived, it was impossible to take advantage of this to march on the city. The delay that ensued gave time to the Arabs to regain heart, and, on the 25th, they again attacked the French lines; but on this occasion the attack was so much less determined and more easily repulsed, that the General determined to follow it up by an offensive movement, which carried the two advanced divisions to the plateau of Chapelle-Fontaine, situated within a few miles of the city walls.

On the same day the last section of the convoy arrived at the anchorage, having on board the siege material. The next few days witnessed a succession of partial actions, large bodies of Arabs having left the banners of the Dey to take advantage of any opportunities that might offer for falling on small parties or stragglers, and plundering on their own account. In these affairs the French suffered severely from their want of experience in Arab warfare, and, on one occasion, a battalion being surprised whilst washing out their muskets, lost nearly eighty men.

On the morning of the 29th, all the arrangements having been completed for the attack on the city, the final advance was made, and the ground occupied for the construction of batteries, the trench being opened during the following night.

By the evening of the 3rd July six batteries were completed and armed, which opened fire the following morning on the Emperor Fort, the fire of which was quickly silenced and a breach effected. It was then abandoned by the garrison, and the magazine blown up. This decided the fate of the city, which was surrendered the following day, and entered by the French troops. The Dey Hussein embarked shortly afterwards for Leghorn, and with his departure the independence of Algeria came to an end.

The object with which the expedition had been despatched was fully attained, complete satisfaction for the insult offered to the French flag had been obtained, and the Turkish rule, which had made the ancient city a refuge for pirates and freebooters, was at an end. This object had been secured at no inconsiderable loss

of life, but the result had redounded to the credit of the French arms, and in the first flush of success France was content to regard with satisfaction the work that had been done and accept it as completed.

But the first flush of gratified pride was hardly over before it became evident that, what had been already done was but a small instalment towards the complete pacification and occupation of the extensive country, peopled by hostile and savage tribes, the administration of which must now fall to the lot of France, if the conquest was to be maintained. Even at the time advocates were not wanting in the Parliamentary Chambers for the abandonment of further operations; and could it have been foreseen what dimensions these operations would ultimately attain to, and the lavish expenditure of blood and money which would be necessitated year after year, their number would have been far greater.

Before the close of the month it was considered necessary to send a column to Blidah, through the Metidja country, which encountered no opposition to its progress; but the commencement of the return march was a signal for attack. The column was suddenly surrounded on all sides by a swarm of Arabs, who maintained a hot fire and caused numerous casualties. The cavalry found little difficulty in dispersing the enemy; but again and again they returned to the attack and interrupted the march of the column.

The first expedition showed only too clearly the serious difficulties before the army of occupation, and the nature of the attack to which it would be exposed in every movement which should take it to any distance from its base. Whatever might be the fate of the cities on the coast, the tribes had no intention of abandoning their country without doing the utmost in their power to expel the invaders.

Had this been recognized from the first, and comprehensive measures taken for the suppression of the hostile tribes, much bloodshed would have been avoided; but it was not for many years afterwards that this decision was arrived at, and in the meanwhile time had been given for a leader to arise, who should organize the resistance with such ability and success as to necessitate the employment of 100,000 men in the conquest of the country.

In the French Capital other interests occupied the public mind than the future of an African province; and while General Bourmont was considering what his next step should be, his counsels were disturbed by the arrival of intelligence of the July revolution in Paris, and shortly afterwards he embarked for Europe. The un-

certainty and hesitation produced by the change of Government were not without their effect upon the native tribes of the Algiers province, whose boldness increased to such a degree that they appeared close to the gates of the city, and threatened to invest it.

In view of this the task before General Clauzel, who had succeeded to the command, was a very difficult one; for the first orders received by him were to send to France a portion of the army of occupation, which he could ill afford to do. In the place of the regiments despatched, in obedience to these orders, he set to work with admirable energy to form native corps from the friendly elements available. In this manner were raised the 1st and 2nd Zouaves, which have since gained such popularity and notoriety, and also the first squadron of Spahis.

In the meanwhile, the entire province of Algiers, with the exception only of Cherchell and Coléah, had fallen into a state of complete anarchy, and the tribes, putting aside for awhile their feuds and animosities, were impelled, partly by religious fervour and partly by the expectation of plunder, to make common cause against the invaders of their country. To such a point had their confidence in their power to expel the infidel emboldened them, that the French were virtually shut up in their garrisons, and it became urgently necessary to strike a blow which should restore the prestige of their arms.

An expedition was, therefore, decided upon to Médéah with a view to installing a new Bey in the province of Tittery, and for this purpose a division of infantry was prepared, comprising twelve battalions, with a reserve composed of one battalion, the Zouaves, the Chasseurs-à-cheval, a field battery, a mountain battery, and a company of Engineers. The expedition, amounting in all to seven thousand men, marched from Algiers the 17th November, arrived at Blidah the following day, and, continuing its march, bivouacked on the evening of the 20th at the foot of the Col de Mouzaïa. The heights were occupied in force by the enemy, and direct access to them was only to be obtained by a path leading through most difficult and broken ground. The following day General Clauzel advanced against the position, which was carried in spite of determined resistance, by means of a turning movement. The energy and success of the attack broke the spirit of the Bey's forces, which retired dispersed, and Médéah was entered the 22nd without further fighting.

But the want of provisions and ammunition rendered a lengthened stay there impossible, and the column set out on its return march the 26th, leaving a small garrison in the place, which, after

its departure, had to maintain itself against repeated and determined attacks on the part of the Arabs, who also attacked Blidah, on the line of communications. Shortly after, the further reduction of the army of occupation necessitated the withdrawal of the garrisons.

The natural result of this withdrawal was to encourage the tribes to again take up arms; and during the summer of 1831 they gave the troops sufficient occupation, although no operations were undertaken on a large scale. The command devolved in December upon the Duke de Rovigo, who had under his orders only three regiments, besides the Zouaves, Chasseurs d'Afrique, and the foreign legion; to which two light battalions of native light infantry, were added early in 1832. A line of blockhouses had been built at the entrance to the plain as a safeguard against the inroads of the Arabs, and these were connected with one another as well as with the city by means of military roads. Many of them were placed in ill-chosen and insanitary spots, which, together with the exposure and severe labour entailed by the execution of the works, caused a high rate of sickness to prevail.

The weakness of the effectives prevented any operations on an extensive scale, which encouraged the tribes to revolt. The endeavour of the Duke de Rovigo to overawe them by the terrible example offered by the execution of one of the tribes had the effect only of leading to reprisals; and shortly after, a peloton of infantry, having been separated during a reconnaissance, were killed, with the exception only of one man, who succeeded in escaping and returned to tell the tale.

Two expeditions were despatched in the month of October, 1832, to the most active points of the insurrection at Coléah and Bouffarik, and a further advance was made subsequently to Blidah. Some resistance was experienced at Bouffarik, which allowed of a serious lesson being given to the Arabs, and had the effect of quieting this part of the country, and no further trouble was experienced until the autumn of 1834.

At this time the hostile and warlike tribe of the Hadjoutes assailed the friendly tribes in the plain in the vicinity of the city, and were only repressed by an expedition sent against them, with which contingents from some of the friendly tribes were for the first time utilized. The pacification which ensued did not, however, last long, and at the close of 1834 the settlement of the country in the neighbourhood of Algiers was little more advanced than at the time of the first occupation of the country. The lines occupied by the garrison had indeed been somewhat extended, but they

could only be maintained by constant combats, while it had been necessary to abandon extensive operations and *Medéah* had been given up.

It was not in the province of *Algiers* alone that, during the first years following the occupation, the French garrisons were exposed to the constant and vigorous attacks of the native tribes. A small force detached to *Bona* shortly after the conquest of *Algiers* was vigorously attacked, and, before any settlement of the country could be effected, it was withdrawn again. A detachment was again sent there the following year, but it was too weak to be able even to maintain itself, and it was not until 1832 that a force was sent to occupy the place of sufficient strength to make itself respected. Desperate efforts were made by the Arabs to recapture the town, but they were firmly met, and such serious losses inflicted upon the assailants, that by the spring of 1833 the country immediately adjoining was completely cleared of the hostile tribes, who altogether abandoned their inroads.

In the autumn of this year an expedition was despatched from *Toulon* to *Bougie*, the most favourable port between *Algiers* and *Bona*, which was occupied the 30th September, after severe fighting, repeated on the following day, and the positions immediately adjoining the town seized. But, notwithstanding their losses and the reverses they had sustained, the warlike tribes from the mountainous districts in the neighbourhood were in no way disheartened, and from their camp, situated behind a hill on which was a saint-house at no great distance, they continued to harass incessantly the French lines.

This went on for twelve days, when General *Trézel*, having been reinforced by a battalion, determined to take the offensive, which he did in three columns; and the enemy, having been surprised by a night march over most difficult and precipitous ground, were completely defeated, though not without having first offered an obstinate defence. The garrison was now left for a time unmolested, which allowed of the construction of a line of blockhouses in advance of the town, and the completion of other defensive arrangements. But early in 1834 the enemy again collected in force, and did not cease to harass the occupants of the advanced works, which they were enabled to do with comparative impunity; for the garrison was so weakened by sickness, the result of constant work and exposure, that any sortie on a sufficiently large scale to be of service was out of the question.

Thus, at the beginning of 1835, the occupation of the important province of *Constantine* was limited to *Bona*, where comparative

quiet prevailed, and to Bougie, where the small and insufficient garrison was closely invested by an enterprising and daring enemy.

The same uncertainty which prevailed regarding the original occupation of Bona was repeated at the important port of Oran, situated in the most western province of Algeria. A detachment sent there shortly after the conquest had hardly landed before it was recalled; but, at the close of 1830, it was definitely occupied by a fresh expedition despatched by General Clauzel, who was suspicious of the intentions of the Sultan of Marocco, the frontier of which State formed the western boundary of the province, who had attempted to seize Tlemcen. Contrary to expectation, Oran was occupied by means of friendly negotiations, without a shot being fired. The tribes were too fully occupied with shaking off the Turkish yoke, for which the fall of Algiers had been the signal, to pay much attention to the new comers. The country was in a complete state of anarchy, the cities of Mascara and Tlemcen being the chief points round which the insurrection centred. The garrison of Oran itself was too weak to make any extension outside the walls of the place, and, consequently, did not have any occasion for coming into contact with the tribes.

This state of quiescence was not, however, destined to last long. In the spring of 1832 the garrison, having been reinforced, began to extend its action beyond the walls of the town, and came into contact with the hostile elements with which it was closely surrounded. At the same time, the young chief Abd-el-Kader appeared on the scene, and from the first gave to the hostilities of the natives an importance they had not before had, both by his personal prestige and the religious element he imparted to the war.

He was the son of Mahiddin, a marabout much venerated in the country, who was chosen by the tribes as their chief after they had gained possession of Mascara.

Declining, on account of his advanced age, Mahiddin presented in his place Abd-el-Kader, at that time a youth twenty-four years of age, who had just returned with him from Mecca, where it had been predicted some years previously by a marabout that he would become Sultan of the Arabs.

He was accepted by the tribes with acclamation, being proclaimed Emir of Mascara, when his intelligence and energy, together with the gift of promptly acquiring an ascendancy over those with whom he was brought in contact, soon gained for him the absolute confidence of his immediate followers, while the prestige of his name brought fresh contingents to his banners.

Proclaiming a holy war against the infidel invaders, Abd-el-Kader marched confidently upon Oran, and on the 4th May 1832 led his force, numbering 15,000 tribesmen, to the assault of Fort Saint-Philippe; but the garrison, protected by the parapet, drove them off without suffering any great loss. The Arabs attacked again on the 7th and 8th, but, being each time beaten back, notwithstanding the example and personal bravery of their young Emir, they became discouraged, and on the 9th they withdrew from before the town. Six months later the garrison took the field, and inflicted a severe defeat upon the enemy, who had taken up a position in which to accept battle.

In the spring of the following year operations on a more extensive scale were carried out, and a quantity of cattle captured, which so irritated Abd-el-Kader that he followed up the garrison, harassing them on their return march, and made some determined attempts on the more advanced works; but, failing to obtain any successful results, turned his attention to Tlemcen, which fell into his hands.

In the meantime, Arzew and Mostaganem were occupied by the French, and an expedition of 1,800 men was sent to surprise two of the tribes, an enterprise which was successfully carried out, but nearly resulted in a catastrophe. While preparing to move off on the return march to Oran, the column was attacked, and forced to fall back fighting. The heat was intense, and the troops exhausted by fatigue, not having had any rest since leaving Oran the previous day. The situation was aggravated by a desert-wind from the south; the infantry were without food or water; and the number of their assailants rapidly increased. The Arabs now set fire to the brushwood, which rendered the heat still more intolerable, and a thick acrid smoke mingled with the sand-laden atmosphere. The situation was well-nigh desperate, and many of the infantry, losing all control and sense of self-preservation, could not be restrained by their officers from falling out of the ranks and throwing away their arms.

At length some wells, at no great distance from them, were reached, and, although the water was brackish and bad, the men pressed round and drank of it with avidity, unable to advance a step further. This moment was seized upon by the Arabs to attack, with the confidence inspired by the belief that their prey could not escape them; but they were disappointed of their hope, and the sorely-tried column, having successfully repulsed their attacks, was relieved by the garrison of Oran. Though so nearly resulting in disaster, the expedition had the satisfactory result of leading to

the pacification of the Sméla tribe, which settled down, after making its submission, in the vicinity of Oran.

But this had little effect upon the general situation; hostilities continued as before, and the activity and determination of Abd-el-Kader kept the Oran division fully occupied during the winter of 1833. The tribes found a rallying-point in his camp, and, organised under his direction as they had never been before, formed a force which could not be disposed of by isolated expeditions. But, beyond the increased difficulty of the situation on this account, the spread of the insurrectionary movement shut the markets of the interior to the French garrisons shut up in Oran, Arzew, and Mostaganem.

Early in 1834 it became evident to General Desmichels that no decisive results could be obtained without entering upon a regular war, for the conduct of which his means were quite inadequate. He determined, therefore, to treat with Abd-el-Kader, and on the 26th February 1834, a treaty was concluded by which the Algerian chief was recognised as "the Prince of the believers," and was given the control of the trade of la Mersa, while the Arabs were allowed to purchase arms and munitions of war. On the other hand the Emir undertook to put a stop to hostilities on the part of the Arabs, to give up his prisoners, to open the markets, and permit Christians to travel in the interior, on condition of their furnishing themselves with a safe-conduct to be provided by his consul at Oran.

At the end of five years of almost constant warfare, the French possessions extended no further than the coast, and at every point the garrisons were reduced, by their numerical weakness, to restrict themselves to a purely defensive rôle. One important result had, however, been achieved, and this was that, by experience in the hard school of war, accompanied by constant encounters with far superior numbers, by continual surprises, ambuscades, and all the ruses of Arab warfare, the nucleus of an African army had been formed, and afforded seasoned and experienced material, which was of inestimable value when operations came to be resumed on a larger scale.

The causes which had led to this state of affairs were to be sought for entirely in the one fact that the French Government had never been able to agree as to what was to be the future of their newly-acquired conquest. Discussion ran high in the country as to the manner in which it should be treated. Advocates were not wanting to urge the most diverse methods. One party were in favour of abandoning the country as a useless incubus, from which

no benefit was to be expected ; another favoured a partial occupation, and the administration of the several provinces by means of native Beys ; while others, again, could be satisfied with nothing less than the complete occupation of the country by force of arms. Between such conflicting counsels it can hardly be wondered at that the Government hesitated as to which course they should adopt. But what cannot be excused so easily is, that for years they postponed coming to a decision and definitely fixing the policy to be pursued. Whether it be committed by an individual or by a nation, as represented by its rulers, this is a sin which never fails to bring its own punishment, and the case related was no exception to the rule.

It led to the short-sighted treaty with the Arab leader, by which an armed truce, with every advantage to the enemy, was entered into, which could not be expected to last a day longer than it would take to make the necessary preparations for a supreme effort to drive the Christians back to their ships. And it led subsequently to sudden and wild panic, to enormous expenditure, extensive bloodshed, and operations on a scale tenfold greater than would have been required at the outset, had a definite policy been adopted from the first.

During the eighteen months following General Desmichels' treaty, Abd-el-Kader, profiting by the enormous prestige he had acquired, employed his talents and energy in organising the tribes throughout the country. He formed the nucleus of a regular army, which had not before existed in any form, collected money, provisions, and munitions of war. The tribes that refused or hesitated to throw in their lot with him, he reduced to subjection by force of arms, and in a few months the movement, which had been restricted to isolated districts, and was without combination or definite system, was organised on a basis of mutual co-operation which was destined subsequently to try severely the well-armed and organised forces of France. While this was in course of progress the Emir carefully abstained from infringing the treaty or coming in any way into contact with the French. It was only when his preparations were completed, and the harvest was gathered, in June 1835, that he threw off the mask, and challenged the garrison of Oran by raiding upon the tribes enjoying French protection under the very walls of the city.

General Trézel had succeeded to the command, and acted in this juncture with firmness, by taking up with his troops a commanding possession some miles south of the city, and sending his cavalry to release the prisoners made amongst the friendly tribes. To this

action Abd-el-Kader replied by a letter, in which he declared war. It was now incumbent on General Trézel to choose between acting upon the defensive—a course which was indicated by the smallness of the force at his disposal and its want of mobility—or boldly taking the offensive. Unhappily for him and the prestige of the French arms, he elected for the latter. That he was to blame for this cannot be denied, though less on account of the smallness of his force than from the condition it was in, both as regards the men who were, after their long inaction, unfitted for the arduous service they were suddenly called upon to perform, and the transport, which was altogether inadequate, and not of a sufficiently mobile nature.

Abd-el-Kader, on the other hand, had collected a large force, formidable alike for the organisation he had imparted to a considerable portion of it, for the improved manner in which it was armed, thanks to the treaty that had sanctioned the importation of muskets and ammunition, for its extreme mobility, and the spirit with which it was animated.

Having advanced to Tlélat, thirty-six miles from Oran, General Trézel remained there some days, uncertain as to what should be his next move, when he learnt that the Emir had established his camp in the plain of the Sig. He had only four days' provisions remaining, and determined to march against it forthwith. The route he had to follow led through broken ground and hills covered with clumps of brushwood; here and there a single track had perforce to be followed, and it was at such a point, where the route entered a thicket of wild olive, that Abd-el-Kader took post, with from six to eight thousand men, skilfully disposed so as to envelop the French force while still on the march. A spirited engagement ensued, but the little column succeeded at length in pushing its way through and dispersing the enemy; but with a loss of 250 men, and to carry the wounded it was necessary to abandon the tents and other articles which occupied the transport. The night was passed on the banks of the Sig, and the following day also, for the situation was a very critical one, and General Trézel hesitated to come to a decision how he should act.

He had only provisions for three days, his transport was insufficient and burdened with the wounded, and, worse than all, signs of discontent and want of discipline appeared. The only hope of averting disaster lay in the chance that the enemy, who had suffered very severely themselves, would not realise the condition to which the French were reduced, and might keep at a distance.

But this hope was destined to be disappointed; by an indiscre-

tion which might have been averted, the state of the column came to be known in the Arab camp, and the information was rapidly spread throughout the entire country. Fresh contingents flocked to the camp of Abd-el-Kader, which he had skilfully disposed about a league from the French bivouac in a position dominating the plain, and where it was secure from attack by a column accompanied by wheeled transport. In addition to 1,200 regular infantry, he had already succeeded in collecting 14,000 mounted men and 1,000 tribesmen on foot when General Trézel decided to march on Arzew, the nearest point to him occupied by the French.

On the morning of the 28th June he marched, the transport formed three abreast, preceded by one battalion, flanked on right and left by some companies and squadrons, and the rear closed by a battalion and two squadrons. His adversary was not slow in divining his intention, and despatched in haste 1,500 foot-soldiers mounted behind his best horsemen to occupy some wooded heights, commanding a defile by which the French must pass. He then started with the rest of his force to press upon the rear-guard, with which they came up about 7 o'clock.

The retreat was conducted with perfect order, and for several hours the Arabs were unable to do more than harass the column with their fire, without disturbing their order or retarding the march. The mid-day heat, however, effected what the enemy could not; the movement slackened, the ranks opened out, and at this unfavourable period the advance-guard came upon the line of Arabs posted in front, by whom they were received with a hot fire.

Partial and unsuccessful attacks were made on their position, and while the troops were still disordered Abd-el-Kader at last succeeded in breaking, with his followers, into the little column. A panic ensued; the convoy was deserted, the wounded with it massacred, and the rout threatened to end in complete disaster, when this at last was averted by the gallant behaviour of a portion of the force, which maintained their steadiness and met the wild and repeated attacks of the Arabs with coolness and determination. Others rallied to them, order reasserted itself, and the small column succeeded in extricating itself from the fatal pass. The Arabs, in the meantime, satiated with the carnage and enticed by the plunder of the abandoned convoy, no longer listened to the voice of their leader. They, too, had suffered heavily, and could not be rallied or induced to make a fresh effort, such as might possibly have proved beyond the endurance of the little band.

At 8 in the evening the ruins of Arzew were at length reached, and the roll-call showed the losses sustained in the unfor-

fortunate affair of la Macta to have been no less than five hundred, besides a gun and almost the entire material—and, worse even than this, the force had lost also their spirit and confidence.

The victory of the Arabs was gained at the expense of two thousand of their best men, and the numerous contingents which had been collected from far and near, rapidly melted away. Abd-el-Kader was constrained consequently to be content with the success he had achieved, and to turn his attention again to the organisation of the country and preparations for the renewal of the struggle on an extended scale, with a view to meeting the renewed operations which he could not fail to see would follow, as soon as the French were in a position to undertake them.

(To be continued.)

“On Leave.”

THE Colonial and Indian Exhibition, which will be opened on Tuesday, the 4th May, by the Queen of England and Empress of India, promises to be one of the most magnificent pageants that has been witnessed since the Exhibition of 1851.

To the visit of H.R.H. the Prince of Wales to India is undoubtedly due the Indian Exhibition, and it is an open secret that for four years past His Royal Highness has diligently turned his attention to the realisation of the conception then formed. The observant faculties of His Royal Highness, when making his tour through India, evidently impressed him with the idea, and how grandly that notion has been carried out, with all the stately magnificence and detail of oriental splendour, will be realised by the thousands who will be present at this cosmopolitan opening ceremony. The portion of the building devoted to India includes the North Court, the Middle Court, the South Court, and South Annexe.

Entering by the Exhibition Road, we find the mural spaces of the entrance hall decorated with a series of pictures of our Colonies. The vestibule is draped with Indian textile fabrics, such as purdahs, carpets, &c. In the centre is a magnificent brass oriental chandelier, and all round are disposed a series of lay figures—life size, representing a great portion of our native army. The oriental effect intended, viz. to convey the idea of the entrance hall of a native palace on a durbar day, is very cleverly realised.

The reproduction of a jungle scene, with life-like figures of the principal wild animals and showy game-birds of India, by Mr. Rowland Ward, will, for some time to come, attract a large crowd of visitors.

The portion of the Indian Section that will attract the greatest notice, will be that known as the Provincial Courts, situated in the Middle Court. On descending the steps from the vestibule, these courts are appropriately entered through a magnificent carved screen of teak and sandalwood, the gift of H.H. the Maharajah of Jaipur. On one side of the screen is written, “*Ex Oriente Lux*,”

and on the side facing the vestibule, "*Ubi Virtus Ibi Victoria.*" Passing through this gate, you find yourself in a new land. Depending from the arched skylights are hundreds of bannerets of Eastern character, which have a very brilliant effect, which, doubtless, will be much enhanced at night when lit up by the brush electrical light.

The general plan is as follows :—Each country is named, and occupies a stall on each side of the broad promenade. In front of every stall is a magnificent carved screen, either of marble or some rare wood or lacquer and gold work, while at the Assam Court the screen is made entirely of bamboos. The arrangement of these screens is excellent; they all appear to be the same height, so that uniformity is well observed, although the carving of each one is a masterpiece, illustrating the remarkable skill and taste of the natives of India, and different from the adjoining one. Here and there are placed lay figures of orientals to illustrate the tribes and castes. The backs of the walls of the several courts are draped with magnificent carpets and other textiles of gorgeous colouring, showing that in the East the art of dyeing and designing is as well understood as ever. Here and there along the walls are trophies of native arms, picturesquely grouped.

In each court will be found a number of glass cases containing specimens of the industrial arts peculiar to each part of India.

In the Jaipur Courts may be seen specimens of horn inlaid with ivory and mother-o'-pearl, carvings in white marble, coloured and gilt, illustrating the model of a temple, or some Hindu deity, silver work, chased and engraved, and various and beautiful specimens of enamel, in which the pure ruby tint has never been equalled, and the arms which these doughty chiefs of Rajpootana wear, when they wage war on their neighbours.

In the Jodhpore Courts a variety of articles will attract the passer-by: textile fabrics, strange-looking Hindoo goddesses, opium-holders, chessmen, &c., and, in one case, there are specimens of brass-work from Jeysalmere, including a rolling lamp. Leaving all the other States of Rajpootana, we pass on to Gwalior, where we notice that some of the carpets are less dazzling, being merely black and white; models of horsemen and other figures in clay, and a screen as magnificent as any other in this court. Indore, with its beautiful silver work, many of the specimens being for sale, including brooches, shirt studs, and sleeve links, and a walking-stick that the Masher-sahib can purchase for half-a-crown. Bikaner with its gold and red screen, and rare specimens of lacquered work. Agra, with its beautiful inlaid marble works.

Benares, with its silks, kincobs, and toys. Kashmir, which will be visited daily by crowds of ladies, who will look with longing eyes upon the shawls. The china-maniac will revel in the various specimens of pottery and Indian tiles. In the Punjaub Courts he will find specimens of vases and platters of conventional plant-drawing, and in the North Court is a native tomb, decorated with tiles, probably manufactured at Mooltan; all are in blue and white, which, it may be noted incidentally, are now adopted as the colours of the Punjab, the shield of which bears on a blue field five wavy silver harrulets, with the appropriate motto, *Crescat e fluvii*.

Tea, in which so many Anglo-Indians are interested, can be seen, and a good deal learnt about it, in the Assam Court, where bamboos, somewhat larger than those we are accustomed to see here, may be studied, and everywhere in the Indian Courts the bamboo will be found performing some useful duty, besides occupying, as it should (in the South or Commercial Economic Court) the place of honour in the form of a triumphal bridge or archway. Forty different varieties of bamboo will be on view, and it will be shown that anything and everything may be made of the great cane, from bridges and screens to drinking-vessels, from houses to spoons and fans and paper. Look up or down the Middle Court, and I think you will agree with me that such a *coup d'œil* of Oriental splendour has never been seen before.

The Durbar Hall will take the place of the Prince of Wales's Pavilion; but space will not allow me to say more than that the entrance is composed of the great gateway from Gwalior, a present from His Highness the Maharajah of Scindiah to the South Kensington Museum.

Before mentioning the Colonial Section, I take the opportunity of expressing my thanks to Sir Cunliffe Owen and his staff for their readiness at all times to furnish any information in their power; and the writer recognises the organising power, skill, and tact of Sir Cunliffe Owen in bringing to a successful completion an exhibition which will ever claim a niche in the history of the Victorian age.

A few words must suffice for the "Colonieries." Australia has received the block of buildings in the immediate centre of the Exhibition which has at the previous exhibitions been occupied by foreign nations, and a new gallery has been erected between these courts and the central gallery, by which it has been possible to accede to the pressing requests for more space made by many of the Australian Colonies. I should say about seven-tenths of the

decorations of these galleries have been left to the artistic skill of Messrs. Gillow; and had South Australia been the only one adorned by this firm, the public will, I am sure, accord to them the highest praise for ornamental skill and beautiful decorative effect:

To snatch a grace beyond the rules of art.

Of course in these Courts will be found trophies of biscuit, of wine, of gold, of pearl-shells, of timber, *cum multis aliis* far too numerous to mention. The *fauna* of these Colonies will be well represented in a series of groups of birds and animals as they appear in their wild state, while adjacent to each Court there is a large conservatory filled with the *flora* of the particular Colony, including the ferns, &c., which will prove an agreeable promenade; and as they will be illuminated by night with the electric light, the effect will be novel and charming. The Government of Victoria issued their official programme from Melbourne, August 1885, and, judging from the appearance of the Court, exhibitors rapidly responded to the invitation. Works of art will form an important feature here, and later on I hope to notice in Division F, Class 48 and Class 49, navigation and life saving, and materials and apparatus for military purposes. The Central Gallery, opening into the upper gardens, has been given to the Dominion of Canada; and as the greater portion of the West Gallery has been given up to the Dominion also, this section should prove singularly attractive to all visitors, but especially to those who contemplate emigrating. The Eastern Gallery, which is chiefly occupied by the West Indian Colonies, is in a very forward state, and the general arrangements of this Court struck me as being excellent. Ceylon—the home of Buddhism—which is situated on the western end of the North Court, though scarcely so forward as many others, will doubtlessly be ready in time; and the places of honour will be accorded to Gautama Buddha, and a magnificent elephant, to say nothing of the beautiful forest-woods, ebony, and ivory. Hong Kong will occupy the Chinese Court. In the Queen's Gate Avenue, at the west entrance of the Exhibition, will be found the various African Colonies, while the Mediterranean Colonies are placed in the Eastern annexe. "Old London Street" will be retained. The Indian Palace will be a most interesting structure, and will be entered through a magnificent gate already alluded to. Given a fine day, there is nothing wanting to make the ceremonial of the opening of the Colonial and Indian Exhibition one of the grandest and greatest successes London has seen for many years past.

The Marquess of Ripon, First Lord of the Admiralty, at a Livery Dinner of the Wheelwrights Company, responding to the toast of the Navy, said (*inter alia*): "In the first place, we must look to supply ourselves with torpedo-boats. One of the difficulties was that, if they proceeded too rapidly, they were liable to find that they had supplied themselves with a large number of vessels which were almost immediately superseded. Consequently, they must proceed with a reasonable amount of caution. But it was not only the matter of torpedo-boats which must engage their attention. There was another important question, and that was the building of fast cruisers to protect our commerce, and he was quite convinced that it would be the duty of the Admiralty to turn their attention to this subject. It was the duty of a wise and prudent Government to combine economy with efficiency, and that, he hoped, would be done."

The sad ending of the Earl of Shaftesbury is deeply regretted by a wide circle of friends. Both in the Navy, and as Honorary Commander of the London Brigade, Royal Naval Artillery Volunteers, he was much liked and very popular.

The retirement of Dr. Macdonald, R.N., F.R.S., the Senior Inspector-General of Hospitals and Fleets, now in charge of the Royal Naval Hospital at Plymouth, will, both by the service and the profession, be regarded as a loss. Educated at King's College, he soon became popular with his fellow-students, and attracted the attention of the late Dr. Todd, whose physiological assistant he became. A clever artist and an original thinker, it was not many years before he attracted the attention of the scientific world by his original writings and discoveries, and was elected a F.R.S. He was the author of many papers, &c., but will be best remembered by his classical article on "Yellow Fever," and his *Outlines of Naval Hygiene*.

H.R.H. the Duke of Cambridge drew attention, in the House of Lords, to the desirability of having "the Queen's Regulations and the Civil Law so clearly going together that there could be no danger of mistake or misunderstanding as to how, when, and in what spirit the troops ought to act when called upon to support the civil power." How well the British soldier knows how to conduct himself on such occasions is well illustrated in the farewell order by Lieutenant-General Lord Clarina: "It will always afford me extreme satisfaction to remember that on the hundreds of occasions upon which, in compliance with requisitions received from the civil authorities, troops were despatched under my orders to assist them in upholding the majesty of the law, not a single in-

stance ever, to my knowledge, occurred of any unnecessary violence having been resorted to by soldiers when brought into contact with the populace, notwithstanding the extreme provocation to which they were not unfrequently subject." It would appear from a contemporary that at the trial of the Bristol rioters, in 1832, by Lord Chief Justice Tyndal, in his charge to the Grand Jury he pointed out "that a soldier, because he was a soldier, did not lose his rights as a citizen, but that, as a soldier, he was justified in interfering, by every means in his power, in the suppression of disorder and riot, even without the intervention of the civil power in the form of a magistrate." This decision was considered of such great importance that it was republished verbatim, and bound up with a copy of the Riot Act in a parchment pocket-book, which was issued to all officers of the army by the military authorities, with instructions that the said pocket-book should at all times be carried, as far as possible, on the person of every officer of the army. Had this excellent rule not fallen into abeyance, possibly the late riots in Pall Mall and St. James's Street might not have happened.

General Viscount Wolseley has made his mark this month as a patriotic orator, an anti-red-tapist, and a kind general. On the subject of Home Rule, in responding for the House of Lords at the Anniversary Dinner of the Association of Foremen Engineers, Lord Wolseley concluded a brilliant speech with the following patriotic sentiments: "Hitherto it had been the lot of the soldiers and sailors to face the foreign enemies of this country with arms in their hands; hitherto they had succeeded in keeping at a distance from our shores foreign foes; but now they called upon the people of England to do their duty, and trample under foot those enemies who were more serious, because they were enemies within our civil boundaries. He called upon them to a man, he called upon the English nation to say 'Stand off' to whoever he might be who would dare to break and dismember this empire, and in doing so ruthlessly destroy it." The deafening cheers that followed this noble speech will long be remembered by those who were present.

Lord Wolseley superintended an official trial of the Morris Safety Range, at Wormwood Scrubs, in competition with the range altered by the Royal Engineers, with a view to rendering the district in rear of the butts free from possible danger from stray or ricochet bullets. Lord Wolseley was accompanied by General Sir Andrew Clarke, General Sir Arthur Herbert, Colonel Julian Hall, Colonel Phillips Smith, and other officers. Experiments commenced with Mr. Morris's safety screen, at which Colonel Phillips

Smith and several picked marksmen of the Grenadier Guards fired some fifty shots at all possible angles, for the purpose of discovering any weak points. In spite of every effort, no ricochet or other dangerous deviation from the direct line of fire was obtained. The screen appeared, to answer perfectly the purpose for which it was devised.

Then similar trials were made with the structures set up under direction of the Royal Engineers. Major Salmond took the rifle, and tried for some time before he could succeed in hitting either of the deflecting plates. His tenth shot, however, grazed the edge of one of them. It was not deflected downward sufficiently to be stopped by the bank built for that purpose, but, passing several inches above it, went onward, and struck the ground some fifty yards in advance. Had a stone or other hard substance been in the way, the bullet would probably have risen at a high angle, and gone clear over the butts to create consternation among people living in the houses beyond. As it was, the soft ground only caused a ricochet sufficiently high to strike near the top of the protecting wall behind the targets. It was, however, clear that a very dangerous ricochet might at any time result from a shot carelessly fired through the embrasures of these screens. A ricochet is the one great danger to be guarded against; and, so far as the experiments went, they tended to prove that for all purposes required the Morris safety sheds answered perfectly well, in that they entirely prevented any badly-aimed shots getting more than thirty yards from the firing-point, whilst a dangerous ricochet had been made from the work of the Royal Engineers.

A contemporary thus describes the concluding scene: "Lord Wolseley is not the man to allow money voted for the maintenance of the army to be wasted if he can help it, and at once saw the value of the Morris Range. Turning to Mr. Morris, his Lordship asked, 'What is the cost of your range, Mr. Morris?' and received for reply, 'Between forty and fifty pounds, Sir.' Then turning to Colonel Dawson Scott, R.E., his Lordship asked, 'And what is the cost of your range, Colonel?' when the answer was, 'About ten thousand pounds, Sir.' Lord Wolseley then asked Mr. Morris to state the sum for which he would undertake to render six ranges at Wormwood Scrubs safe, and was informed that it would cost £240. It is to be hoped that, with these facts before Lord Wolseley, Mr. Morris's ranges will be ordered at once, as it seems preposterous to suppose that this costly and dangerous range of the Engineers will be allowed to remain."

Lord Wolseley was very happy in his remarks at the dinner

above alluded to, when he said "he was glad to have the opportunity of meeting a member of the engineering profession who had so greatly distinguished himself upon the occasion of the Nile Expedition. He alluded to Mr. Henry Benbow, who, he was bound to say, was a credit to the profession. The shot which did damage on that occasion not only went through the side of the ship, but pierced the boiler, and, under most trying circumstances, Mr. Benbow repaired that damage, and by his ability, energy, and courage saved the whole party upon the boat." The art of saying the right thing at the right moment would appear to form an essential part of Lord Wolseley's eloquence.

Goode's Desiccated Food is, I am glad to learn, likely to prove a valuable, nutritious, and portable food for horses. The experiments that have been going on at Aldershot for some time past appear to show that the majority of the horses, have done remarkably well. When I visited the Headley Steam Mills, I was shown the compressed food done up in bales of 75 lbs. each, which are made perfectly even, so that they lie upon one another like bricks—the idea being that a number of them could be rapidly piled up and form a zareba. A few days ago a trial was made at Aldershot to ascertain their resisting power against rifle bullets. After firing 800 rounds at a few bales, it was found that a bullet would occasionally penetrate a bale, but had not sufficient energy left to enter a second bale. With such satisfactory results, why not call them Goode's Zareba bales of Forage?

I came across an invention the other day which both the army and navy are likely to take up. Berkeley's Patent Safety Match Holder does away with all the bother of an ordinary box of matches, which may upset, break in the act of striking, or not go off. They are convenient little metal boxes which fit nicely into the waistcoat pocket, being much smaller than the ordinary match-case. All you have to do is simply to move back the lid and withdraw one of the matches sharply and it ignites. The matches are all retained in the box by a slight spring. Safety is absolute, and the Holder can be refilled by simply withdrawing the empty case and inserting a fresh one. They are sold at all tobacconists and are as cheap as ordinary matches. A second variety is made for bed-rooms to hang up against the walls, and a third variety to stand on library tables and in smoking-rooms; and no doubt from the many and obvious advantages they possess—security, economy, and simplicity—the Berkeley Patent Safety Match Holder will rapidly supersede the old-fashioned and dangerous lucifer boxes.

At our Palais Royale—the Criterion—*A Man with Three Wives*

is a piece to see, not to be described. It is full of the funniest adventures it is possible to conceive, and goes, from first to last, without a hitch. The audience are kept in one continuous state of merriment and laughter. Mr. Lytton Sothern plays his part admirably, and, although we shall all welcome the return of Mr. Charles Windham, everyone is delighted to think that an opportunity has been afforded Mr. Sothern, which unmistakably shows that this clever and intelligent actor has made so distinct an advance in his profession as to fairly entitle him to a place in the first rank in future. Mr. Sothern has worked hard at his profession, and has evidently been guided by the traditions of what he has seen and heard of such masters of the craft as his late father, Charles Mathews, and Mr. Windham. The character he now acts is quite original, and is free from servile imitation or mannerism. He performs the character throughout with unflagging spirit and perfect *sangfroid*, while the spirit of fun he infuses into it never exceeds the bounds of good taste. The hearty applause he receives nightly from the assembled audiences proves, better than anything I could write, Mr. Sothern's increasing popularity. All the other characters are admirably acted. Mr. George Giddens has a part that exactly suits him. Mr. Blakeley is as unctuous as ever, Mr. Maltby creates roars of laughter, and the ladies are not a whit behind in giving all the *verve* and *ensemble* that this clever adaptation of Mr. C. M. Rae deserves.

And so Minnie Palmer, with her pretty ways, soft ways, wayward ways is going to leave us for the Provinces, and after that goes round the world. But M.P.M.S. has made one promise; she will return and stay with us for ever. Will she be the same little girl then as now? Will she wear short frocks and poke satin bonnets? Will she wear and show the pretty stockings she now wears? Minnie will be a big girl then. We tremble for the result. That Minnie will be welcomed goes without saying. *Our Sweetheart* will be joyously received by all, and if she brings nothing back but herself, she will delight old and young by the intelligence of her acting, the refinement of her singing, and her graceful original dancing. *My Sweetheart* is a piece that no one ever tires of, and children, equally with adults, appreciate the singing, dancing, and acting characteristic of this idyllic piece. Good-bye, M.P.M.S.!

Reviews.

ROLL OF THE OFFICERS OF THE FIRST AND SECOND BATTALION YORK AND LANCASTER REGIMENT. By Major G. A. RAIKES, F.S.A. London: R. Bentley & Sons.

These two handsome volumes contain the roll of officers of the old 65th and 84th Regiments, compiled by an author whose history of the Honourable Artillery Company is regarded as a model of what regimental histories ought to be. To each volume Major Raikes has appended a short but comprehensive account of the career of each battalion. The task of searching the records to prepare the rolls must have been terribly dreary; but Major Raikes has, in spite of this, done his work in a most conscientious and masterly manner, and we sincerely trust that military libraries and readers will display their appreciation by helping to exhaust the edition as quickly as possible. There could be no better form of praise than to purchase the work.

THE STATESMAN'S YEAR-BOOK FOR 1886. London: Messrs. Macmillan & Co.

Thirty pages of fresh matter have been added this year to this invaluable year-book, dealing with the Congo, the Straits Settlements, and Fiji. Mr. J. Scott Keltie has immensely improved the work since he succeeded the founder of it, Mr. Martin, and it now ranks as one of the best reference books of the day. One section still needs reorganization and revision: we refer to the list of books at the end of each country. Many given are obsolete or worthless, while a large number of modern standard works are omitted. In the case of Russia, Mr. Marvin's least-known pamphlet, *Baku*, is given, and his more important works, at least a dozen in number, are omitted. In general, the lists are neither representative nor complete; but, in pointing this defect out, we

would have it clearly understood that the descriptive matter is fresh enough ; the naval and military information being singularly good throughout.

NIGHT ATTACKS. By Captain R. J. JOHNSON. Messrs. William Clowes & Son.

A carefully prepared and concisely compiled treatise on nocturnal attacks, which may be specially commended on the score of clearness, freshness and vigour. The numerous accounts of night attacks given testify to the extensive character of Captain Johnson's reading; the principles he gives prominence to are sound; and, in excess of valuable appendices, he adds twenty-seven sketch plans, to illustrate the principal nocturnal enterprises of the age.

CRIME AND PUNISHMENT. By FEDOR DOSTOIEFFSKY. Messrs. Vizetelly & Co.

English readers, tired of the milk-and-water tendencies too common in this country now that our best novelists are departed, will read with relish this Russian realistic novel, written in his best mood by the best of Russian story-writers. It is a work of astonishing vigour, is full of dramatic interest, and few will peruse it without wishing to read other productions of Dostoeffsky. Like all of Vizetelly's translations, the rendering into English is faithful and uncurtailed, and one is not disappointed, as in the case of a rival rendering of *Sappho*, at finding a professedly exact translation a mere abridgment of the original. Those who may share our satisfaction and enjoyment in reading Dostoeffsky's novel would do well to turn next to Victor Cherbuliez's *Trial of Jett Malabret*, issued by the same firm, which is well worthy of being included in Vizetelly's admirable series of one-volume novels.

OUR WAR-SHIPS. By Sir W. CUSACK SMITH. Messrs. Kegan Paul & Co.

An "essay" which, to naval officers, contains nothing new, and which only explains to the general public what is already known to nineteen out of every twenty persons who take an interest in naval matters. It is written in the curt, paragraphic style dear to certain French novelists, and exasperating to most English readers, and the astonishing solemnity with which the author serves out his spoonfuls of platitudes is only equalled by the daring dogmatism which impels him to take the knottiest controversies of the hour, and whittle them into a page or two of three-line sentences. *Our*

War-Ships is described on the title-page as a "naval essay": it is really a screaming farce. There are pages calculated to promote as much mirth among naval men as the writings of Mark Twain, or *English as She is Spoke*. How it came to be published we cannot possibly conceive.

DAYS AND NIGHTS OF SALMON FISHING. By WILLIAM SCROPE. London: Hamilton, Adams, & Co.

We are glad to note the issue of a new edition of Mr. Scrope's admirable work on salmon fishing, which has long been regarded as a standard one on the subject. The numerous illustrations in it are by Sir David Wilkie, Sir Edwin Landseer, Charles Landseer, and others. Mr. Scrope's twenty years' experience and adventures as a successful angler, are described in a graphic and interesting manner, and his hints are invaluable. In its new and attractive form, we trust it will enjoy a fresh lease of well-merited popularity.

THE OCEAN WAVE. By HENRY STEWART. London: Mr. John Hogg.

Is a new edition of the narratives of some of the principal voyages, seamen, discoveries, shipwrecks, and mutinies of the world, compiled by Mr. Stewart, after a deal of painstaking research, and put together in an interesting manner. As usual with Mr. Hogg's books, it is got up in a handsome style, and well illustrated, and altogether is well adapted for seamen's libraries.

THE BRINY DEEP. By CAPTAIN TOM. London: Messrs Griffith, Farran & Co.

This is a story of olden times in the merchant service, illustrated in a very spirited manner by Captain W. W. May. Although belonging to the category of books of fictional adventure for boys, it is in reality a narrative of everyday life on board the author's own merchant vessel, of the incidents that occurred during a passage from London to Rio de Janeiro, with sufficient fiction to give the story coherence. Captain Tom writes in a simple yet graphic style, and tells his story in a straightforward manner, like a true seaman.

THE SEARCH FOR THE TALISMAN. By HENRY FRITH. London: Messrs. Blackie & Sons.

Mr. Henry Frith, who has written a number of successful books of adventure for boys, here pitches his story in icy Labrador.

The loss and the recovery of the *Talisman* constitutes the framework of the tale, and plenty of exciting incident is introduced in connection with hunting seals and bears floating on icebergs, and mingling with the Esquimaux. The illustrations are particularly good, being even above the point of excellence the publishers have maintained for years, and impart additional interest to a well-told story.

CRIMEAN CRACKS. By AN EDINBURGH BOY. Edinburgh: Messrs Blackwood & Sons.

It is, perhaps, almost too much to expect particular interest to be excited by the appearance of a series of letters dealing with the Crimean War, considering the immense amount of literature that has been published on the subject, including many volumes of the character of the above, since the struggle came to a close; but, none the less, the author wrote such capital letters home, that he has a full measure of justification for issuing them, even after the lapse of thirty years from the time they were penned. He has acted rightly in leaving his impressions uncorrected, notwithstanding some now appear crude, and we doubt not that many will read the book with the same pleasure we have done.

THE HISTORY OF THE LOYAL MUNSTER FUSILIERS. By LIEUT.-COLONEL INNES. London: Messrs. Simpkin Marshall & Co.

The first edition of this history of the Royal Munster Fusiliers, formerly the Bengal European Regiment, was warmly eulogised in these columns, and we are therefore glad to note the appearance of a second edition, in a very attractive form.

THE HIGHLANDS OF CANTABRIA. By MARS ROSS & H. STONE-HEWER-COOPER. London: Messrs. Sampson Low & Co.

This handsome work on Spain is the joint production of the author of *My Tour in the Himalayas* and the author of *Coral Lands*, two books which made their mark at the time they were issued. The highlands of Cantabria are best known to the public by the immense quantities of iron ore—3,000,000 tons—shipped annually from Bilbao; but the authors show that besides the great resources of the country there are magnificent salmon streams, open to everybody, and only three days' distance from London, as well as abundance of sport and most beautiful scenery. The latter is well illustrated from photographs taken on the spot. A final chapter is devoted to instructions for the guidance of those who care to

try Cantabria. To those already discussing their next holiday tour we make the suggestion to read this capital work. There is plenty of pleasure in Cantabria for those who like to take things quietly, while the accounts that are given of bear and boar hunting, and tracking the chamois, must make the mouth of every Nimrod water.

MAPS AND ATLASES.

FROM Messrs W. & A. K. Johnston, of London and Edinburgh we have received the "Howard Vincent" map of the British Empire. It is a large, clear, and astonishingly cheap map, and not only includes the latest annexations, but also a variety of statistics of great value. No better map could be recommended for military libraries, and we trust that the authorities may see their way to adopting it for soldiers' reading-rooms. If retrenchment proves a barrier, patriotic feeling on the part of officers and others might impel them to subscribe among themselves to make known by means of this map the proportions and the position of the Empire to the soldiers under their charge.

From Mr. J. Ruddiman Johnston, of Murrayfield, Edinburgh, has come the "Merchant Shipper's and Ocean Traveller's Atlas," containing a dozen large and excellent maps of the ocean. The steamship routes and harbours of the world are in this clearly and accurately displayed, and the atlas unquestionably supplies a pressing want by furnishing for the traveller on the ocean the information which railway maps give to those who journey on land.

TO CORRESPONDENTS.

All MSS. intended for insertion must be directed to the Editors, Army and Navy Magazine, 13, Waterloo Place, London, S.W., and must contain name and address of the writer. Name and address on letters is insufficient.

It is requested that ruled paper be used, the pages numbered, fastened together, and a small margin left.

Every care will be taken; but neither the Editors nor the Publishers can be responsible for the loss of MSS. through the post or otherwise. When MSS. are desired to be returned, stamps must be enclosed.

Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.

THE ARMY AND NAVY MAGAZINE.

JUNE 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 30.)

2.—Head-quarters and Military Authorities.

“THE constitution of the head-quarters of an army is of an importance that is not always sufficiently recognised. There are military leaders, who do not need any advisers, and who consider and determine everything themselves; their colleagues merely execute. But these are stars of the first magnitude, such as are not met with in every century.

“In the majority of cases the leader of an army will not wish to be left without a council. This latter may be the result of the combined consideration of a smaller or larger number of men, whose education and experience pre-eminently qualifies them to arrive at a correct judgment. But this number may only pronounce one single opinion. Its military and hierarchical organisation must tend towards subordination, even a subordination of thoughts. This single opinion alone may be submitted to the Commander-in-Chief, reserving his own examination of it, and then only by a person specially authorised to do so; and this latter should be chosen by the Commander-in-Chief, not according to precedence, but from considerations of personal confidence. Even if what has been advised is not in every case absolutely the best course to adopt, it may, provided that the matter has been properly and consistently dealt with, attain satisfactory results. The Commander-in-Chief's merit is infinitely greater than that of the counsellor, in that he has taken upon himself the whole responsibility for carrying this opinion into execution.”

"But, on the other hand, if a general be surrounded with a number of men, each independent of the other—and the more distinguished and the cleverer they be the worse the case is—and listen sometimes to the advice of the one, and at other times to that of another, if he carry a measure, practical in itself up to a certain point, and deal with a measure still more practical in another way, and then discern the well-founded objections of a third, and remedies proposed by a fourth, we are prepared to wager a hundred to one that in spite of all these, it may be well-meant, measures, he will lose his campaign.

"There are in every head-quarters a number of persons who know how to point out all manner of difficulties, whatever operations be proposed. As soon as the first complication takes place they prove conclusively that they have foreseen all that would happen. They are always in the right, because they do not themselves care to propose anything positive, and still less to carry it out, and thus they can never be refuted by results. These negative gentlemen are the ruin of commanders of an army.

"But the most unfortunate of all is that general who is controlled, and who has to give daily and hourly information to this controlling power, as to what his schemes, plans, and intentions are; a commissioner from the central authorities at head-quarters, or at all events a telegraph wire at his back, these are the ruin of all independence of all prompt action, and of every bold venture, without which war cannot possibly be waged."*

This warning has special reference to the Austrian head-quarters in the year 1869.

It is, however, not necessary for us to look to foreign military history, in order to study the unhappy constitution of a head-quarters. Our own furnishes us unfortunately with a perfect instance. In the year 1806 there were head-quarters at the head of our army, the character of which was such as to render it almost impossible that an army could be well led. Clausewitz speaks jokingly of a Congress that was commissioned to lead the army. And very like one it certainly was. The Duke of Brunswick properly commanded the whole forces. But the command of a portion of the forces, the so-called main army, was also entrusted to him.†

* *The Italian Campaign of 1859*, edited by the Historical Division of the General Staff of the Royal Russian Army.

† In 1757 there happened something similar, on the occasion when King Frederick commanded all four columns of the army advancing into Bohemia, as being commander-in-chief, and commanded further the division marching from Dresden in his capacity of particular commanding general. But a Frederick, who was

Prince Hohenlohe, at the head of another great division, was in part co-ordinated, and in part subordinated to him. His position as General was almost as high as was that of the Duke; but, in the army, he was more highly esteemed. He conceived himself obliged, for the good of the country, to play an independent rôle, and to attract much influence to himself. His quartermaster Massenbach encouraged him in this belief. Rüchel's case was similar. For both of these men two separate armies had to be organised, in order that the pretensions, which they were supposed to have, should be satisfied. But the King was also in the chief army of the Duke. He had, as a matter of fact, only come in order that his presence should increase the energy and the rapidity of all measures, and his influence naturally leavened the whole, for the Duke, before taking decisive steps, proceeded to hold councils of war, which were attended by the Monarch. The King was attended by Phull, the oldest officer in the general staff, and virtually its chief, because the nominal chief, Geusau, owing to his being engaged in the administrative department of war, did not trouble himself with the command of the army. The field-marshal Möllendorf was also with the King, for though, owing to his eighty-two years, it was not proposed to give him active employment,* it was believed that his experience was needed. In like manner Zastrow, in whom Frederick William III. had in earlier times felt special confidence, was summoned to the royal head-quarters. Colonel Kleist, the adjutant-general, was attached to it, owing to his influential position. A subordinate rôle was played by Kalokreuth, who commanded the reserves of the main army, and was always about the persons of the King and the Duke. Diplomats also took part in these deliberations and decisions. In these conferences the Duke's part was only taken by Scharnhorst, the chief of his staff, junior in rank to Phull, and even to Massenbach, new to the army, and without the gift of making, in a short time, his personal influence felt. The side of the actual commander-in-chief was accordingly, even in point of voices, doomed to play an inferior part. The King's personal adherents decided all matters. Instead of leading, the Duke was led, and this, says Clausewitz, he suffered very readily.

In the council there was no lack of acute men and well-educated,

assured of his authority under all circumstances, could allow himself to do such things, but not a Charles William of Brunswick, especially when he had a Hohenlohe under him, and was besides himself in a position of dependence.

* In 1806 he had been in command of a reserve corps.

first-rate soldiers. Some of them—Scharnhorst, Kleist, and, we may say, Phull also—rose, in later times, to great historical renown. But what they all here jointly effected was worse than nothing—in short, the acme of confusion and indecision.

The cause of this unhappy character of the supreme command was exclusively due to the considerations paid to leading personages, to gratify whom divisions of the army were made and offices created. Unfortunately such considerations, where there is no great power to lead, are wont to interfere in most momentous questions. Clausewitz, who served on that campaign as a staff-captain, of twenty-six years, and as adjutant of Prince August, saw very clearly, in spite of his modest position, how matters stood.

“With what difficult circumstances Scharnhorst has to contend is scarcely credible,” he wrote to the Countess Marie Brühl, on the 29th September, “yet one gets some idea of it when one knows that there are three field-marsals and two quartermaster-generals with the army, where properly there should be only one field-marshal and one quartermaster-general. I have never in my life met a man who was more qualified to overcome difficulties of that kind than the man to whom I refer; but how much of the effect of his talent is not lost, when it becomes weakened by so many conventional impediments, and lamed by the unceasing friction [of strange opinions! *So much is certain, that an unlucky issue, should such come about, will alone be attributable to these petty conventional considerations, for, in every other respect, this moment is a very enviable one for the King of Prussia.*”

Now, when, in the further course of this book, head-quarters are spoken of, we must carefully distinguish between the *great head-quarters*, which have the control of all the armies in the field, and the *army head-quarters* of each single army, which, in German official language, are described as being “*armee ober-kommandos.*” As far as the actual nature of the thing goes, both are essentially the same, and what is said of the one will, as a rule, be true of the other. I shall, therefore, for the purposes of this work, ignore any distinction in principle, and shall only point out differences just where necessary.

The proper constitution of the head-quarters, especially the harmony existing between the commander-in-chief and the chief of his staff, can do much towards supplying the want of heaven-born strategists, of whom we treated in the foregoing chapter. Definite rules on the point cannot certainly be laid down.

A happy co-operation depends in the first place upon personal sympathy. Where this latter does not exist, all theory leaves us in the lurch. If different natures shall mutually supply each other's deficiencies, there must exist one common and similar character, and all the diversities that there are must be confined to individual talents and inclinations. The chief of the general staff is differently situated with respect to the head-quarters than is the general field-marshal. He has the choice of a number of persons, among whom he can select those most suited to his purpose, as well as such as are, at the same time, acceptable to him in personal intercourse. The commander-in-chief, on the other hand, is dependent upon the person of the chief of the general staff, and cannot put him on one side without producing confusion. It is, accordingly, essential, before all else, that a good choice should here be made. Bad relations existing between both these men must produce the worst possible effect upon the fate of the whole army. Seldom will anything of the matter be known abroad, and the cause of the failure will be looked for elsewhere than at its real source. Only after great disasters are polemical writings or the investigations of courts-martial wont to throw some light upon the internal relations previously subsisting. We are at once reminded of Bazaine and the chief of his staff, Jarras, whose want of harmonious co-operation has been disclosed to us by the famous Trianon action. Their relations had previously been good. But Jarras, so long as the Emperor had himself taken the supreme command, that is, from the commencement of the war until the afternoon of the 12th August 1870, occupied the position of a second chief of the general staff, under Lebœuf. Bazaine, accordingly, regarded him, when assigned to him by the Emperor as chief of his staff, as an uncomfortable spy, whose duty was to control his actions rather than to promote them. Besides this, General Jarras had been left without any information as to the general situation of the army. This circumstance rendered it difficult for him to be of real assistance to the Marshal.

Bazaine, accordingly, kept him away from the command, assigned to him a purely passive sphere of duties, and regarded him as nothing more than a secretary of high rank. The consequences soon came. On the 12th August, the Marshal resolved to march away with his army from Metz to Verdun, to avoid being shut in. The idea was correct, but the mode of putting it into execution was the most miserable that can possibly be conceived. Bazaine himself had given orders to march off, and had laid down the line of march, viz. by Mars la Tour and Etain to Verdun. Thus it

came to pass that, whilst four roads might easily have been utilised for the retreat, the whole army, with its cumbersome baggage, was forced upon the one single road leading from Metz to Gravelotte, and was blocked up for days in the narrow valley abutting on the Moselle. Had not independent action taken by certain subordinate commanders come to its assistance, the confusion would have been still greater, and it would have been utterly impossible, even on the 16th August, to have deployed the army into battle array. "At a moment when the question of hours might decide the fate of France, the most elementary rules of precaution were neglected."* Bazaine threw the blame upon the chief of the general staff, who, on his side, declared that he had not heard anything about the whole movement until it began to be carried into execution. Which of the two is right, and which is wrong: whether or no Bazaine purposely did not consult with Jarras, or whether Jarras felt himself too quickly offended, and held back at the wrong time, is certainly hard to determine. The mutual relations of the two were, in any case, false. Neither of them ought to have permitted them; for they certainly contributed, in no slight degree, to the destruction of the army—and the army paid the penalty.

The field-marshal of modern times can no longer be all in all. Even genius requires independent and trained co-helpers. How much more must a commander who is not a star of the first magnitude be in need of counsel and assistance! The mechanism in the command of an army has become too great for one single individual. Technical matters are likewise concerned, and these require special knowledge.

For psychological reasons, again, intimate relations between the general and the chief of his staff are none the less requisite. A general is always rather circumscribed by a sense of responsibility, and prejudiced by the originality of his judgment. It is accordingly just as well to assign to him a second soul which, freed from this pressure, finds it easier to preserve to itself its full objectivity and liberty of views. Between both a give and take of emotions will take place; and thus, in making a resolve, all that proceeds purely from personal sensations will be wanting. But the intercourse must needs be a very intimate one.

The field-marshal accordingly, even when he is not the supreme head of the whole forces, should be allowed, as has been urged above, to appoint the chief of the general staff. He must be certain that, for the most important epoch of his life he will not

* Words from the accusation against the Marshal. V. der Goltz, *Volk in Waffen*, 2nd edition.

be fettered to a personage towards whom he has an antipathy. How much of his feats and exploits are not dependent upon his frame of mind! and this latter again is, in great measure, influenced by the kind of intercourse he has with the man with whom he must work together daily and hourly for the solution of the most serious questions.

The proper functions of a chief of the general staff are not regulated by law, and would not permit of being defined by law. Individual circumstances, capacities, and inclinations must decide everything. Frederick and even Napoleon were virtually their own chiefs of the staff; and yet the former missed Winterfield, and the latter Berthier, when obliged to be without them.

Napoleon dictated to one of his adjutants definite instructions for the Major-Général in the form of a letter. "My cousin! Order General S—— to collect the enemy's artillery that we have taken in E——; order the Quartermaster-General to bring up thither all the magazines as well; order Marshal M—— to occupy with a strong force the neighbourhood of F——; have a large hospital erected there," &c.

In short words he thus enumerated his measures. Berthier separated them from each other, drew up each order specially and addressed them to the several addressees. But additions had, of course, to be made to them. Napoleon's memory was excellent for facts and topography, but was weak for proper names. This we have not merely by Bourienne's testimony, but the Emperor's letters themselves betray it. Very frequently we meet with passages such as these: "The General who commands in W—— must proceed to E——, in order to take over the command; the General who is at present at K—— must come closer to the army." And this in places where we may with certainty pre-suppose that the Emperor must have known beforehand who the persons in question were. In this respect he was very incorrect. In matters of fact, however, there was, as a rule, nothing wanting. Berthier's position was more that of a chief of the Cabinet with high functions than that of a chief of the general staff.

King William, in 1870, allowed his chief of the general staff, General v. Moltke, to issue independently to the *armee ober-kommandos* the orders to carry out the evolutions which had been preconcerted in counsel with him. They bore the signature of the chief of the general staff, but were regarded as royal decrees.

The constitutional monarch of a modern civilised state, who is, even during the war, engaged by governmental cares, and harassed by questions of internal and external policy, will be

obliged to allow the chief of the general staff more independence of action than a general that ascended the throne, like Napoleon, and whose government is, strictly speaking, merely a military dictatorship.

Quite different again must be the state of things where one general in the army takes the place of the commander-in-chief, and another the place of the chief of the general staff. In this case both are able to an unlimited extent to devote their energies to the command of the army. According to this it would be natural if the office of chief of the general staff were to become circumscribed.

But it remains firmly established that the general must direct his strength principally to great resolves, to conquering inevitable doubts, and to attaining an unshaken clearness of conviction. It is not wise to burden himself too much with details of execution for which smaller creatures, by endeavouring to conquer their inward restlessness, display a special inclination. Employment certainly gives us a kind of tranquillity. But men behave like the ostrich, burying their heads in the work, and forgetting over it the anxieties of the moment. The general must not do this; otherwise he runs the risk of averting his glance from important questions and directing it to empty trifles. If, after consultation with the chief of his staff, he has definitely declared his resolve, and has arrived at an understanding with the latter upon the general plan of operation, everything else, the carrying out of orders and the arrangement of the various details, is best entrusted to the chief. That commander-in-chief who insists himself upon writing and directing, robs his mind of the leisure required to furnish him with ideas. He ought to think, rather than wield the pen.*

Where the armies are of great strength, the chief of the staff must avoid confining his own sphere of action too much to the secretarial duties of generalship. He ought every moment to be at the disposal of the commander-in-chief, in case the latter is in need of his advice. The necessity that work with the pen once taken in hand should proceed without interruption, demands that it should be left to someone who cannot be called away. It is a doubtful praise for a chief of the general staff, if, in the ordinary

* The number of the troops is certainly of moment. An intelligent and independent general at the head of an army consisting of divisions can best himself, on account of the greater expedition, jot down on paper the few orders that are to be made. But he is, as a matter of fact, only a general in command, and a commander of an army in name only. What we have just urged is true principally of the great armies of five or six army corps and some cavalry divisions, which now-a-days are considered the normal arrangement.

sense of the word, he be called a great worker. True, he needs untiring activity, but this must be confined to directing rather than to spontaneous action. Certain orders, especially important documents, directions for decisive evolutions or battles, must be written by him with his own hand. Hereto belongs also the correspondence with the central head-quarters and with the general staff of the collective forces. But of the daily work he must throw as much as possible upon other shoulders.

His position is a twofold one, and, as such, very engrossing. On the one side he must be the counsellor, friend, and confidant of the general in command, and, on the other, the organiser and conductor of a numerous staff, frequently composed of very heterogeneous elements.

If it be true that the energy of a commander-in-chief is, under certain circumstances, dependent upon his frame of mind, this is equally true of the whole staff. The chief of it gives, by his behaviour, the tone to the army. If this tone is a happy one, full of many-sided contentment and friendly co-operation, the machine will work doubly as safe, quick, and well. Dissension and bitterness, which easily enter into a body that is composed of such heterogeneous elements, where at the head of it a wrong personage stands, may ruin all, even though the clearest heads are there. In the head-quarters of an army the best man in the army ought properly to stand. It must, accordingly, be required, more than elsewhere, of him that he gives the best of his strength to the best of his ability.

Harshness in service is accordingly, in this place, less justified and less serviceable than elsewhere. The more friendly the relations of the whole the better everything goes. From the brilliant interior there always falls a beam upon the troops without.

Ill-temper or satisfaction shown in the highest places communicates itself to the troops. They play a great part in the exploits of armies.

It follows, from the position of the chief of the general staff, that not only an important, but also, sometimes, a personage of winning manners is required, who must also have the gift of natural influence over others. There are people enough who, in the most friendly way in the world, can get the most exacting performances out of each one of their subordinates. Such men are pre-eminently qualified for chiefs of a staff. As there is no fixed rule for the position of the chief in an army, so there is also none such for the functions of the individual members of the staff. The republican freedom thereby created has great advan-

tages. So long as in peace no army unions exist, the "ober-kommandos" will be improvised. Officers of the general staff, and the adjutants, are collected from the whole land, and are often neither known to each other nor to their chief.

If everything were laid down beforehand, according to rank and age, as to what each had to do, that would, at the first look, certainly have the advantage of simplifying the whole. But this advantage is only a small one. It does not outweigh the important disadvantage that it is, more or less, a matter of chance that the right person comes into the right place. Given a few days the colleagues become accustomed to one another, and each finds the place most suited to his individuality. Little depends upon rank, but all upon harmony.

It is necessary to relieve the chief of the staff, not merely of work, but also of a number of small cares which are entailed by the daily life of the army. Therefore, though he ought to set the tone of the head-quarters, his time ought not to be taken up by the many decisions which the living together of fifty, sixty, or seventy officers and civilian officials require.* He needs for this purpose a representative, so that questions, disputes, and difficulties at once find their way up to him.

Hence the necessity of having a representative of the chief in the head-quarters. As such we regard the general, or principal quartermaster-general. The French army of the Rhine had, in 1870, in addition to the first-named, two *majors généraux*, who divided these duties.

The quartermaster-general in the great head-quarters of the whole forces, and the principal quartermaster-general in each single army, can create for himself a great sphere of action; for there are innumerable matters, each one of which does not exactly decide the fate of an army, but all of which together exercise an important influence upon it. Numerous questions of internal management which concern the comfort of officers and soldiers daily occur, but for which neither the commander-in-chief nor the head of his general staff will find time. They belong to the province of the quartermaster-general. His instrument is the orders of the day, which, independent of the orders for the movement of the troops, concern the whole of the internal life of the army: personal matters, the transport of prisoners, the sick and wounded, the details of reinforcements, as well as the many neces-

* In great head-quarters of all arms these numbers increase five-fold. In spite of all possible limitation of numbers, there will always be a great number of followers.

sary commands, &c. His special duty it is, also, to keep all the wheels of the machine in uniform motion, and to regulate their working, as well as to exercise supreme control over the *bureaux* of the head-quarters.

The general or principal quartermaster, when it is necessary to assist the general by giving advice in certain matters, will be able often to afford the chief of the staff valuable assistance. Two shrewd men convince each other sooner, and less easily exhaust themselves in giving reasons pro and con, than one man. But it is essential that both must have one heart and one soul, because otherwise the fatal cohesion of influences and a mutual paralysation are unavoidable.

For the organization of such important bureau service an officer must be clothed with the functions of "bureau chef," without it being necessary or practical to give him this title. Very much depends upon the correct and rapid expedition of orders, almost as much as upon their being well drawn up. The greatest disasters and difficulties may arise through false transmissions, or by a mistake that is of little importance in itself; and a wrong address may bring one army corps into confusion, another into doubt. When such mistakes frequently occur, mistakes proceeding from subordinate persons, the confidence of the troops in the whole command is lost.

It will be difficult to find anyone to discharge these duties who has not a talent and inclination for them. Therefore, in this place, all considerations of rank must cease, and only a fit and proper person must be duly chosen. Persons that are imbued with bureaucratic notions, and such as prefer before all else the slow old method of bureaucratic duties, and feel in cleverly despatching a pile of papers as much pleasure as a general in a battle which he has won, are, as a rule, not far to seek. It is only very requisite to keep away from this office, an office to which a certain external and noisy importance is attached, such persons as only wish to make themselves important, who, for the sake of their own importance, prefer small details to great questions, and who perpetually hinder great matters by ever meddling and muddling with rubbish. Quiet conscientiousness and taciturn circumspection are here the greatest essentials.

The general staff, which, according to the strength of the army, consists as a rule of four to six officers, occupies itself in the main with the working out of marching orders, billeting, and battle. With one word, its duties include everything that the army-orders contain with reference to the operations of the army.

A special art for which again great talents are requisite, lies in the drafting of orders. It cannot be done by everyone. Persons who have the best ideas, sometimes do not understand how to express them clearly in writing. As it is necessary to follow closely and exactly on what has gone before, and to work with the memory, the duty of issuing them must be in one hand.

It will, moreover, as time is as a rule very valuable, be difficult to assist the old general staff-officer who is entrusted with this duty by any previous preparation. Any moment fresh orders may be required, as the state of things changes, and thus this officer must be ready for work, day and night.

Here it is where, besides clearness of thought and language, the greatest energy for work must be displayed. Unweariedness must be a conspicuous quality. He will naturally very soon become the special confidant of his chief, and it is well here to choose a man who holds among his comrades a natural authority, so that his special position does not lead to differences.

Next, the general staff must control the intelligence department. Knowledge of the enemy's country, its language, and of the enemy's army, are especial qualifications for this post, and, besides this, a certain talent for discovering things which cannot readily be defined. Industry and caution play often a greater part in this intelligence department than the gift of guessing secrets. All reports, announcements, and correspondence, which serve to explain the movements of the army, matters of railway and telegraph interest, and, besides this, the inevitable correspondence with the enemy, with the civil officials of the country in which the war is being waged, the map and book department, and finally the keeping of a diary, are all part of the duties of the general staff.

Besides these, reconnoitring, information relative to its own army, or such affecting the situation of the enemy, the sending of orders, and oral information, the explanations of mistakes, and assistance in superintending the carrying out of orders, all come within the sphere of its activity.

The adjutant's department in the *ober kommando* superintends personal matters, advancements, petitions, grants of decorations, and the keeping of rolls of losses and strength, the fresh drafts of men and horses, the ammunition, as well as the intercourse with private persons.

In the field, the service of the adjutant's department unites itself with that of the general staff, for the same purposes, and there is not any vital difference between them. The individu-

ality of the several officers is, in this case, more decisive than the fact that they fall under the one or the other category.

Certain orderly officers are always indispensable to the head-quarters. Their special duties consist in the carrying of written orders to the lower commands. In their efficiency, perseverance, punctuality, and tenacity in overcoming unforeseen difficulties, great value must be placed. To distant and solitary rides into the enemy's land, there belongs, especially when the population is unquiet, much determination, courage, good horsemanship, and a good horse. The best mounted cavalry officers, of whom it may be at once declared that they do their duty by day and night with cheerfulness and adroitness, are chosen for these duties in the head-quarters. Both man and horse can perform more in time of war than a civilian can readily believe. A patrol officer, under Prince Frederick Charles, covered the distance between Orleans and Vierzon—twenty-two German miles—on one winter's day during the Loire campaign, upon the same horse. Similar feats were several times performed in the German armies. In the *ober-kommando* of the second army, it was found at that time practical, up to a distance of ten German miles, to have the orders executed directly by orderly officers,* and only to employ other means, such as relays, where greater distances had to be covered.

Communication between the various head-quarters is kept up by the *feld-jäger*, of which every *ober-kommando* has several, where it cannot be done by telegraph. These make their journeys as a rule per carriage or by railway.

Freedom and mobility in employing the forces at disposal is of advantage at head-quarters as everywhere else. Yet, in certain branches, a mechanical system may be of service, that it may not in exciting times be forgotten, and fail to act, to the detriment of the whole, when it is most necessary. It were well if every member of the *ober-kommando* were obliged, in addition to his ordinary duties, to bear one thing in mind. We only need remind our readers of those numerous cases where armies have lost touch of the enemy. The reason almost always is to be found in the fact that the care that always was devoted to the intelligence-service slumbered at that very moment when great impressions took

* It is well always to send two orderlies at the same time on considerable and dangerous distances, not only for the sake of greater security, but also because horses in company go better, and remain fresher. It is seldom of advantage to send soldiers with them. One or two horsemen, in the case of a brush with the enemy, can do little service, and their horses are, as a rule, not good enough to keep even pace with those of the officers. They accordingly are more likely to be a hindrance, and bring them into embarrassment, than to be of service.

possession of the senses. Especially was this the case after bloody battles. The late wars afford us examples enough of this. Nothing is easier to explain: a decision by arms takes possession of all the senses and thoughts. A reaction takes place in the energies that have been hitherto exerted to their utmost, immediately the decision is over. Each company will, as a rule, satisfy itself with resting for the moment on its laurels. Time goes quicker than was thought possible; people then begin to rub their eyes and to make the discovery that the enemy has gone, and all touch of him lost. In head-quarters, in such moments as these, complaints are loud that no intelligence whatever is to be had of the troops. The fact is overlooked that a comparatively large number of well-mounted officers is at their disposal to fill up the gap, by a rapid ride up to the enemy. The men, through whom the important orders should otherwise proceed, are at that moment occupied with other matters. A meeting of high staff-officers, or even of many members of the *kommando*, upon a battle-field that has been won, is easily productive of the fact that, whilst discussing what has just taken place, the interest for what is coming escapes unnoticed.

It will be a good arrangement if a man who is not occupied too much with other matters, and is, besides, not too highly placed, be made the sole responsible authority to see that all intelligence is not cut off from the *ober-kommando*. He may, without detriment, be given certain independent authority over the younger officers of the general staff and adjutant's department, and this will, as a rule, suffice to assist the troops in their intelligence duties, or, at all events, to supply their deficiencies.

But we have as yet only cited a single instance. Experience will teach us that a similar institution acts well in many respects.

In the case of the representatives of the auxiliary forces, for the artilleryman and engineer, who serve as counsellors of the commander-in-chief as well as on their staff; and, again, in the use of the administrative departments, the quartermaster of the army, the surgeon-general, the chief of the field police, the postmaster, and the heads of the telegraph department, &c., their functions are, from the very nature of the case, more distinctly defined. In their case orders and instructions may be given which, whilst they allow free scope to the quartermaster of the army, must, in the case of the postmaster, be very precise and restrictive. As the duties of all these functionaries move in certain grooves, definite instructions are not in their case attended by the dangers such as would beset the general staff proper, for which each day

has surprises in store such as cannot be provided against. Independence, and the capability of taking upon themselves the initiative, are also of importance for the subordinate branches of the head-quarters. War brings everyone into unforeseen situations.

The duties of the artilleryist, the engineer, and of the administration and medical department have, of course, perpetual points of contact with those of the general staff, and are, in many cases, identical with them. The *chef* of the general staff will, in his general conduct of affairs, secure the necessary harmony in working; and will frequently work with the several departments. Especially will this be the case in the quartermaster-general's department, as will be seen when we come to treat of the commissariat.

No unimportant personages are two officers attached to every head-quarters, to whom special attention is not generally paid. The first is the commandant of the head-quarters. It is his duty to see to the discipline and orderly conduct of the small troop, which an *armee ober-kommando* represents, with its officers, its men, its carriages and horses. This duty is a very troublesome one; for discipline is hard to maintain in such an incongruous body, formed only at the commencement of hostilities, and of most heterogeneous elements. There is here wanting that hierarchical spirit which is the life and soul of a regiment. No less disorder may be followed by serious consequences, trivial as it appears to be, whether the train-soldiers in the body or the waggons are punctual or unpunctual, or march in this way or in that.

Officers of the general staff, adjutants, &c. have seldom time in war to see to their own affairs, their servants, their horses and chests. The bureau demands their attendance immediately they dismount, and they frequently only leave it again, when a move forward is made, without having time to look after their own affairs. All the same a lame horse, a lost shoe at the moment when, perhaps, we wish to take a sharp ride, vexes us the whole day; whilst a chest that has been mislaid, when we want to get quickly to work, utterly ruins the temper. Complaints of persons that they have lost this or that, are all the less readily attended to, as we can seldom assist them. It will be said that trifles ought not to be of any influence whatever in such momentous times; but we are once and for all men, and remain human even in war. That feeling of importance which during the first few days fills everyone, is lost when the campaign has lasted a few months, and then the trivial annoyances of daily life are of more effect. The commandant of the head-quarters, who knows how to make himself its father, and who, in his capacity as universal provider, clears away all rocks

and makes room for contentment and good humour deserves not only the thanks of his colleagues, but of the whole army as well.*

For the same reasons the *Quartiermacher* of the head-quarters is an important personage. A gastronomical talent should be found out, who is ready to cater for the bodily wants of his comrades. Hunger and thirst cannot, after all, be disregarded by even the most passionate soldier. At the head-quarters all those who are in any respect important personages have no time to provide for themselves. This care must be taken off their shoulders. The general in command ought never to be obliged to trouble himself about personal comforts. His staff is there for the express purpose of removing every stone from his path, and his servant should, like himself, be a genius in his profession. It is a matter of course that the man who, in the midst of his great exertions, lives well, keeps himself in every respect fresher than does he who is starving. These small considerations must not, accordingly, be left unnoticed; otherwise they force themselves at wrong times upon the attention and insist upon their due.

The lower authorities, like general *kommandos*, staffs of division, &c., usually exist in time of peace. The spheres of action of the several departments are regulated by long habit. As a rule the same groups are distinguished as in the head-quarters of the army. The further we descend, the wider does each individual sphere of action become. In a division, for instance, where there is, in our army, only a single general staff officer, he must become a factotum of the division and unite all in his own person. His duties demand greater versatility and more activity than those of a general staff officer at head-quarters. He is chef, quartermaster, and general staff; all three at once.

A good organisation of the several *departmental commands*, and a happy choice of the men who are dependent upon each other for the period during which the war lasts, and a clear hierarchical grouping—these are the bases of good generalship.

We Germans have in late years been very successful in the organisation of our head-quarters. The experiences of 1806 were not made in vain. But all only turned out so well as it did because no one looked about to try and discover how model head-quarters should be constituted; but historical development was allowed free scope, and it proved itself as successful in this matter as it did in many others. The head-quarters of the Silesian army

* At his side stands the commander of the reserve-watch—that is that small detachment of men that is assigned to the head-quarters for orderly duties of all sorts. It may be a material support for the commander of the head-quarters.

of 1813 are the model for modern times. Its origin was due to the personal relations subsisting between the men who filled the highest positions in it—Blücher, Scharnhorst, and Gneisenau,* who met together, unanimous in opinion, when their fatherland was hard pressed, and worked together in harmony until the long-wished-for hour struck which realised the dream of the liberation of their country. When Scharnhorst was no more, the unity was still preserved. 1864, 1866, 1870, the tri-unity, viz. *commander-in-chief, chef, quartermaster*, was again adopted. Here, too, men met together who had met together in time of peace, and of whose concert the country was assured when war came. But, in spite of all this, there will have been plenty of difference of opinion. How should it not be so, when vigorous characters, to whom the case is more sacred than personal interest, are called upon to act in concert. But never did anything of it ever penetrate into the outer world, and never did the army or the great cause suffer thereby.

3.—*The Command of an Army.*

It is a difficult art, to command properly. In life everyone learns that it does not matter so much *what* and *how much* is commanded, as how commands are given. Parents find their best experience in their own children. They know that obedience is very dependent upon the more or less definite form in which the command is given. It frequently happens that in the tone of the voice a doubt is expressed as to the effect the command will have, and then, in spite of the most violent expressions and most energetic gestures of the person commanding, disobedience is certain to follow. Our rules of education run as follows: to forbid nothing where disobedience of the command can, owing to the force of circumstances, be with tolerable certainty predicted; and to command nothing to be done, the accomplishment of which must prove subsequently to be impossible. But before all things—and who does not know this?—every command must be clear, so that the recipient of it knows exactly what is expected of him. And war does not know other than these simple rules of command; there is not any higher wisdom than this.

These rules are very simple, but their application in the arduous duties of war is not easy. In war, there is attached to every order a great responsibility, and when a mistake is made in it, punishment is generally not slow to follow. That fills the person com-

* Later, after Scharnhorst was wounded, and after he had died, Blücher, Gneisenau, and Müffling.

manding with secret anxiety, and we readily perceive that, in the case of a good commander, the character is more concerned than the intelligence.

There results, moreover, from this, that in war, where matters are serious, we must reckon more upon a lack of orders than upon a superfluity of them. Too many orders are, at all events, wont to be only of a negative character. Where the possibility of a disaster is in the air, an order is easily sent; but that order cannot alter the state of things—it is only intended to furnish a proof that the person commanding has thought of the danger. Frequently it is also accompanied by the secret wish not to have to bear the fault oneself, but to successfully throw it upon some other shoulders, as is done in the case of certain games at cards, the slipping a bad card, just before the close of the doors, into one's neighbour's hand.

Finally, all orders in war rest upon a very insecure basis. They have been built up upon knowledge of the enemy, and this knowledge is never quite perfect; therefore the observance of the rule that nothing be commanded that is incapable of being carried out is rendered exceedingly difficult.

If these facts found proper consideration; if everyone would only command that for which he is ready to undertake the whole responsibility; if negative orders were never given, and if no one issued any more orders than such as, from the knowledge he possessed at the moment, could be with certainty carried out, much would be gained.

And then we must find a proper measure of how far, in issuing commands, we may enter into details. A number of considerations here confront us; the whole constitution of the army must be considered. We Germans were often not able to suppress a smile when the "instructions" which the French generals issued to their armies, and especially to those of the Republic of September, fell into our hands. The well-known book of Chanzy, *La deuxième armée de la Loire*, contains a considerable number of them. We find there first of all narrated what has taken place, in a conversational manner, as, for instance: "The enemy endeavoured to-day to force us from our position; he attacked us time after time at St. Laurent des Bois, and pushed forward near Poissy towards Cravant and Villorceau. According to information that has been given us by prisoners, the whole army of the enemy was engaged, together with numerous artillery. We have, in spite of this, resisted this attack with much energy, and we have remained masters of our position, after causing the enemy considerable loss.

It is necessary that everyone should be inspired by this new success, and should take fresh hope; for we must keep our positions and withstand them once again if the Germans should make a fresh attack."

Such and longer narratives form the introduction to orders which fill up three or four pages of print, and contain a number of details. Such would, in our case, be impossible to conceive; and yet these orders were issued by one of the first French generals of modern times, and who was assisted by a distinguished chief of his staff.

The reasons of this were due to the extraordinary constitution of the army, in which much that is a matter of course with us was not at all a matter of course with them, and therefore must be especially ordered and enjoined. Numbers of officers were new to their duties. Many men of note in the quickly collected army had drawn their swords for the first time in order to help defend their fatherland in its general distress. There was a lack of independence, experience, and circumspection. The field-marshal had not simply to issue his orders, he had at the same time to teach and explain to each one as clearly and precisely as possible what he had to do, were the "instructions" ever so long-winded. That a Turkish Pacha must needs command his Mesopotamian and Armenian troops in a different way to that in which a German deals with his, is self-evident. The peculiarities of the army, its training, its habits, &c., must in each case be decisive.

But taking a system like ours, we may lay down a few general rules. One such, that the superior officer should never prescribe to his subordinate who is at a distance what the latter is better able to see as being on the very spot: in this way orders are simplified, and the recipient has the necessary sphere allowed him wherein to exercise his discretion. No order should be issued in the case of a thing of which one might be convinced would be done even without special orders. There is something very dangerous in habitually giving orders as to such matters, and the commandant may only give vent to his care that nothing should be forgotten, by his control, and not by calling attention to it in his orders. If the troops are once accustomed to have every detail that they have to obey enjoined upon them, they become accustomed to do nothing when orders are once wanting.

The most important and the best orders that have ever been given in war in our time were very short and simple, as, for instance:—

"According to intelligence received, it may be taken for granted

that the enemy will assert himself upon the plateau between Le Point de Jour and Montigny la Grange.

"Four battalions of the enemy have advanced into the Bois de Genivaux. His Majesty is of opinion that it will be best for the 12th Gardes du Corps to march in the direction of Batilly, in order, in case the enemy marches off in the direction of Briey, to come up with him at St. Marie aux Chênes, and, in case he remains upon the high ground, to attack him from Amanvillers.

"The attack would have to be made simultaneously by the first army from the Bois de Vaux and Gravelotte, and by the 9th Army Corps towards the Bois de Genivaux and Vernéville, and by the left flank of the second army from the north."

These were the decisive orders for the attack before the battle of Gravelotte and St. Privat, an attack for which 200,000 men were set in motion. There is nothing here mentioned of the manner in which the troops are to form, and what precautionary measures they should take, how they are to support each other, and how they are to keep their connection with each other, &c. That was all left to the commanders-in-chief of the armies and the generals in command.

Let us, secondly, take as an instance one of the executive orders which followed the first. It was issued in the second army. "The enemy is concentrated on the heights of Leipzig and Bois de Vaux. He will be attacked there by the 1st Gardes de Corps, advancing by way of Amanvillers; by the 9th Corps, advancing by La Folie; by the 7th and 8th Corps in front. There will advance to reinforce them, the 12th Corps upon St. Marie, the 10th Corps upon St. Ail, the 3rd Corps upon Vernéville, the 2nd Corps upon Rezonville." Here, too, there is certainly not one word too much. Yet it is not said that in any particular case a single detail may not be directly commanded from above, the importance of which cannot, in lower commands, be distinctly perceived; for instance, in a former order issued for the same attack of the 18th August, we find: "The 9th Corps shall march up in the direction of, and upon Vernéville and La Folie. If the enemy is posted there with his right wing, the Corps shall begin the action by bringing a considerable force of artillery into play."

Here, then, we find the manner in which he shall carry out his orders prescribed to a commanding general; but there was a special reason for it in this case. It was the intention of the supreme command not to attack decisively in the front, before the enemy's right wing was completely turned: it was, therefore, necessary to give a hint to the corps which would probably be the first to meet the

enemy that it should not engage at first in too serious action, but should only begin the action by a lively cannonade. Similar cases will always happen, and then the commander-in-chief must not, out of respect for the science of warfare, be prevented from personally giving detailed orders.

How far details should be gone into will depend upon the position the person commanding takes. The commander-in-chief who leads great armies composed of independent divisions, each commanded by generals of high rank, will often have to confine himself to expressing his wishes and intentions to them, and to leaving them to contribute to their accomplishment according to their best judgment. Thus, in that first order issued on the 18th of August there is expressed little more than the opinion and general intention of the King. Yet the rule in such cases will not be quite uniform. The commanding general must keep securely in his own hand, and under his own eyes, a portion of his army, in order to be enabled to make disposition of it at any time, whenever unexpected events render his immediate and personal interference necessary. The corps over which he disposes in such moments acts like the rudder of a ship, which could not otherwise be guided. In order to explain how many embarrassments and perplexities may arise when the field-marshal has nothing to dispose of, but has given all his corps full liberty of action, we need only point to the instance of Blücher during the memorable days of 1814. When Napoleon suddenly appeared before Champaubert and attacked the Russian general, Olsuwief, with superior numbers, Blücher was with his head-quarters in Vertus. But he had not one single man there at his own disposition. In the feeling of security that had taken possession of the Silesian army since La Rothière, and in consequence of peculiar circumstances, all divisions had independent tasks assigned to them. Blücher and Gneisenau certainly knew that it was all up with Olsuwief, as he was weak, and without cavalry, and the French cavalry hemmed him in on every side in the plain, and that Napoleon, if he had defeated the general, would be standing victorious among the columns of the Silesian army, and yet neither of the two could either help or devise any counsel; for, in war, help and counsel are without value unless accompanied by bayonets. Marshal "Vorwärts" was obliged, accordingly, in bitter wrath, to decide upon retreat, and to hasten, as soon as was possible, to the corps of Kleist at Fère Champenoise, in order there, at least, to have some troops under his control.

Whilst, accordingly, the divisions that are close to the enemy and are far away from head-quarters, enjoy great liberty, and, as a

rule, only know the wishes of the field-marshal, without having any other rule to guide them; those who are far removed from the enemy, and near the field-marshal, are placed at his special disposition, and must submit to have definite orders issued to them, and to feel themselves thus tied to apron-strings. Their comfort must be that *rôles*, as a rule, soon change. The lower the position of a person issuing commands, the smaller his division is in comparison with the whole, and the more will his orders enter into details. Freedom of action confines itself here within even narrower limits. Consideration must be paid to troops lying before us, behind us, and to left and right of us; and thus the possibility of collisions increases.

The commanding general can only in very rare cases—as, for instance, when he is alone with his army corps and detaches his divisions from each other—issue orders to these similarly to a commander-in-chief to his several corps. If he is compelled to advance upon a road, it will be part of his duty to determine in what order the divisions or parts of his corps should march. The commander of a division must do this as a matter of course, except he has had an independent mission assigned him to perform with his division, which entitles him to act independently as though with a small army. His orders, seeing that a division, as we have already observed, is considered to be the smallest unit for the great operations of war, will, as a rule, reach so far down that each battalion, each battery, and each squadron will learn where its place is without any intermediate authorities interfering in the matter. In battle all this will be altered. The commander of a division will dispose of all the single groups which are naturally formed of his forces, according to the objects and the course of the struggle.

(To be continued.)

The Voyage of the "Pelican."

THE WORLD ENCOMPASSED BY SIR FRANCIS DRAKE.

By FREDK. DIXON.

ALL Deptford is keeping holiday. The creek is alive with wherries, whilst its shores swarm with merrymakers. A medley of silken doublets and leathern jerkins, of mighty brocade-clad hoops and neat russet petticoats, of ruff-environed necks and bare tanned throats, of steel morions and velvet bonnets, surges good-temperedly about; especially opposite a tiny ship beached upon the sedge under the bank.

Look at it respectfully, and take off your cap! For it is the *Pelican*, Sir Francis Drake's *Pelican*, the first vessel which has carried St. George's Cross round the world! Eh! and for that matter, the father of the British navy—the ancestor of the *Revenge*, the *Content*, and of the *Victory*—from whose masts' heads the meteor flag has floated supreme above the battle-clouds, from sun-lit Portobello, basking on the Spanish Main, to where the winter surge beats into Quiberon Bay, and from the waters as they eddy above the sunken reefs of Zealand to the rollers as they break themselves against the rocks of Cape Trafalgar.

But why does all Deptford keep holiday, and what has brought down all the gallants from Whitehall? To-day the Queen banquets aboard the *Pelican*, and dedicates its timbers to the nation. For the last time its crew has reefed its sails, and, instead of St. George's Cross, have nailed the Latin epigrams to the mast. Henceforth in the cabins, instead of salt junk from the galley, savoury messes will be served from the Pelican Inn. Henceforth not Devon mastiffs, but sleek London citizens, will keep the watch upon that famous deck; and, leaning o'er the bulwarks, gaze out, into the gloaming, upon the Kent and Essex shores, just as of old its mariners stared with wild surmise at the snow crowns of the Andes, gleaming in the moonlight; or the forests of the tropics, heavy with perfume, sparkling with fire-flies, and echoing with the voices of a myriad moving things. But the cheering is over; beneath the blue sky of England—for England had blue skies then,

when the Thames was a silver river gliding through glistening fields—upon the very deck which he has paced under the Southern Cross, Captain Drake has knelt, and arisen Sir Francis Drake. The Queen has gone ashore, the holiday folk have all gone home to supper, but let us linger aboard a moment or two longer, if it so please you, and, watching the Palace lights as they begin to twinkle through the trees, try if, standing where we do, we cannot breathe something of the spirit which made such deeds possible

In the brave days of old.

And first of the men themselves. There is, perhaps, no passage in the whole of those diaries which the greatest of modern heroes, the last of England's Knights-Templar, wrote in his desert prison at Khartoum, hoping against hope, as he scanned the mocking mirage for the glint of British bayonets, which has burned itself more deeply into the hearts of his fellow-countrymen, than that in which he draws attention to the miserable part which our Governments, as Governments, have played in history, compared with the splendid services of the men who have made England what she is. It is a truth for all time, worthy the consideration of everyone, and of none more than those latter-day writers, never so satisfied as when insisting that the sea-kings of Elizabeth were, at their best, no better than buccaneers. But let these comfortable critics remember that they are writing 300 years after the defeat of the Armada; let them remember that the claim of Spain to the sole possession and right of intercourse with the New World and the Pacific was then no empty boast, but an accomplished fact; let them remember that the boundless wealth of that Empire upon which the sun never set was poured into the coffers of the Escorial in support of the Holy Office; let them remember that the black-robed familiar and the yellow San Benito were as well known in the streets of Lima as in the squares of Madrid, and that if Spain had conquered they would soon have been seen in every town in Merrie England, from Berwick to Penzance. Then let us, remembering all this, face boldly the fact that they were buccaneers; for they lived in troublous times, when might was right. and when, as Wordsworth sings—

The good old rule
Provided all the simple plan,
That those should take who have the power,
And those should keep who can.

Nevertheless, it is well for England that she was the mother of such buccaneers; for when the Spanish Inquisition was clasping in the embrace of the Virgin of Nuremburg the consciences and

bodies of the New World and the Old; when the iron heel of Parma was set upon the throat of European liberty; when the Bearnese, casting aside the white plume of Ivry for the black beaver of the reconciled son of the Church, was bowing himself before the Host at the foot of the high altar in the Cathedral of St. Denis; and when the hammers of the smiths and the mallets of the caulkers were ringing out from Ferrol to Barcelona the news that the Armada was coming, it was the buccaneers of England who stood in the gap, who first withered the arm upraised to strike, and then met its last frenzied blow. And chief amid those who went out to do battle with the new Goliath was this Devon David, whom the Queen has knighted aboard the *Pelican*, and who has lived to see the answer to the prayer which, kneeling upon the summit of the mountains of Panama, and staring down upon the gathering swell of the Pacific, rolling its eternal breakers from the horizon to the coast, he offered up to God, seven long years ago, that he might be granted "life and leave once to sail an English ship in those enchanted seas."

You may see his likeness any day in a hundred different pictures, from the engraving in Prince's Worthies down to Mr. Lucas's last great picture of "Plymouth Hoe," where, with bent shoulders, and arm outstretched towards the Lord High Admiral, as if in deprecation of alarm, he looks up from his half-poised bowl to offer the cheeriest, sturdiest counsel that ever man gave in so terrible an emergency. But, no matter where you see it, two things in his face will always strike you. A look of cool, impudent—eh, even devilish—daring which seems to twinkle from out his great grey eyes; and an expression of iron, deliberate determination set round the corners of his firm hard mouth. For the rest, an ordinary-looking man enough, with a short, well-knit figure, indicative of immense strength, and a round, bullet-shaped head covered by close-cropped hair, trimmed with a point between the temples.

Everybody knows what little there is to tell of his early life. How he was born far down in the "West countree," where the little hamlet of Tavistock nestles on the edge of Dartmoor, and where to-day his statue, erected by a descendant of that Duke of Bedford who stood his godfather, and gave him his name, points with its fingers proudly to the globe beside it, as though, being dead, yet would he speak, and say, "Thou shalt have dominion also from sea to sea, and from the river unto the ends of the earth." How his father, worried by that persecution "wherein the sting of Popery still remained, though its teeth were knocked out," departed from the Devonshire lanes and came to live amongst the hop-gardens of

Kent. How, in the broad bend of the Medway, as it sweeps round under the towers of Rochester and on past the dockyards of Chatham, the future Viking learned to keep his baby sea-legs. How his father sent him to sea aboard a channel coaster, and himself went across the river to be vicar of the little church at Upnor. How his master, dying, left him his vessel. How he traded for a while with France and Zealand, till, the narrow seas proving "but a prison for so large a spirit," he ventured all his savings in the West Indian fleet, and went a-slaving, with his kinsman Hawkins, aboard the *Jesus*. How, on that terrible night in the harbour of San Juan de Ulloa, he was baptised with the baptism of fire, and lost all save life and honour. How the chaplain convinced him he would be justified in recouping his losses, "a case which," as Prince dryly remarks, "was clear enough in sea divinity, and few are such infidels as not to believe doctrines which make for their profit." How, accordingly, with Oxenham for his lieutenant, we find him, four years later, picking the lock of the New World silver granaries at Nombre de Dios, getting pretty nigh killed this time for his pains, and saved only through the pluck and devotion of his crew. For, as his ill-fated friend told the men of North Devon, standing in the sunshine on Bideford quay, "Tell me, ye sons of shotten herrings, wasn't it worth more to save him than the dirty silver? for silver we can get again, brave boys; there's more fish in the sea than ever came out of it, and more silver in Nombre de Dios than would pave all the streets in the west country; but of such captains as Franky Drake heaven never makes but one at a time, and if we lose him good-bye to England's luck." And so doing and daring, growing in hatred of the Spaniard and all his works, until, with the help of Leicester and the Queen, he has got together that tiny fleet which is to carry the first Englishmen into the forbidden waters. No! Not quite the first. Honour to whom honour is due. From its gibbet at Lima, the body of hapless John Oxenham sways slowly in the breeze, but not for years to come will Drake learn his miserable story—of how his old comrade, tired of waiting, and swearing that Drake was as Moses, who viewed the promised land from afar off but was not destined to enter it, but that he was as Joshua, and would possess it, had sailed away to the Spanish main, and, having hidden his ship in the forest jungle of Panama, toiled with his merry men over the mountains and through the rhododendron thickets till they stood on the shores of the Pacific, and rested in the Isle of Pearls; and then, having built themselves a pinnacle, launched it upon the "promised" waters. It was gallantly done, and great things might have come of it had he not, like Samson of

old, yielded to the charms of a Delilah—though one who, in his case, proved true, and whom it was bruited he met not for the first time—and, forgetting his duty to his men, in the light of her Spanish eyes lingered till it was too late, and all was lost. He failed ; and now Drake's turn has come.

It is the winter of 1577, and there, swinging at anchor under Plymouth Hoe, lies his squadron. You might stow it all in the hold of a modern liner, and never know it. There, flying the ensign of the Admiral, is the *Pelican* itself, a little 100-tonned ship, having aboard "rich furniture and silver dishes, and expert musitians," for Drake will not sail beggarly against the Spaniards. There, too, is the flag-ship of the Vice-Admiral, John Winter, a man gallant enough, but lacking the indomitable will of his chief ; it is the *Elizabeth*, 80 tons. Alongside of them lies the *Swann*, a fliboat of 50 tons, whose captain is John Chester ; and close at hand swings the little *Marigold*, a bark of 30 tons, commanded by John Thomas. These, then—with a pinnace of 15 tons, which, under the command of one Thomas Moone, has brought down the chaplain, Mr. Fletcher, a harmless gentleman enough, albeit described by Mendoza as a warlike and terrible Puritan—comprised the whole fleet. Drake is almost the only man aboard who knows whither they are bound, but those 164 British seamen will never flinch from the man who is not afraid to lead them.

Saturday, the 15th of November, is flitting rapidly away. The sun has plunged into the western sea, and the long winter's night is closing in. It is 5 o'clock. The lights are beginning to twinkle along the shore. The song of the busy seamen rises on the evening air. The capstans are manned, the anchors come dripping from the water, and in another minute, with bending yards and canvas set, the fleet is running out to sea. The weather in the Channel outside proved boisterous. All night they ran before the wind, and when the morning at length dawned they were forced to make the harbour of Falmouth.

The 16th passed away. Still the wind blew. The 17th came, but the gale only increased in violence, and, penetrating to their very anchorage, carried the masts of the *Pelican* and *Marigold* by the board. Such a start was unpropitious. There was nothing for it but to cut away the wreckage and refit. Sulkily enough, and no doubt a little disheartened, they worked slowly back to Plymouth, and it was not until the 18th of December that, having given the rendezvous for the island of Mogadore, they once more put to sea, and watched the English cliffs fading slowly from their sterns, not to be seen again for three long years. This time all

went well. A quick, prosperous run down the Channel, and then southward across the Bay, and down the coast of Spain. You must give it a wide berth now, Francis Drake, for you are as yet only a buccaneer. But the time will come, only ten years hence, when you will approach that coast the commander of the Queen's fleet. Then you will anchor off the port of Lisbon, and bid the Marquis of Santa Cruz, the Captain-General of the invincible Armada itself, come out and fight you. Daring with four ships the navies of Spain and Portugal! And when he refuses, you will go in and burn their shipping about their ears in all their harbours, saving only this Lisbon which is forbidden you, and return home in triumph, having "sing'd the King of Spain's beard" from Cadiz to Corunna. And so, leaving Spain in their rear, the ships flew on, until, on Christmas Day, they swept along past the fair white sands and hills of Barbarie, and, rounding Cape Catino, let go their anchors at their rendezvous by the isle of Mogadore.

The arrival of so gallant a squadron off their coasts excited no small commotion amongst the Moors. The news spread like wild-fire; the inhabitants came hurrying to the beach, and made signs that they would be fetched aboard. And so, to prove his friendliness, Drake sent one of his boats ashore, and brought off two of their chiefs, who, having been "entertained with a dainty banquet," gladly promised to trade with him for such things as he needed. Next day, accordingly, a boat was sent to obtain fulfilment of their promise. But in the meantime the Moors had taken alarm. Was not King Sebastian planning an attack upon them? And what if this innocent-looking trader should prove to be some proselytizing Portuguese, holding aloft in one hand the crucifix, and in the other the sword! The descendants of the men who had followed Boabdil and Abdallah into Africa, who had seen the Korans blaze in the market-square of Granada, and the mosque in the Al-puganas, with its human charge of women, sent, bomb-like, up to heaven by Christian gunpowder, knew too much about the parental rule of Mother Church to care about being clasped to her bosom. They determined to make sure of their men before it was too late. As soon as the boats grounded, one of the men, who had been ashore on the previous day, jumped out and ran unsuspectingly forward to greet his new friends. But their greeting was scarcely all that he had anticipated. In a moment he was surrounded and hurried away. With a shout of rage, his comrades rushed to the rescue; but they were outnumbered and unprepared. For a minute there was a tough struggle on the beach; for a minute the shouts of "Allah!" mingled with the cries of "treachery," and

then the Englishmen were driven slowly back, and forced to take to their boats. Drake was the last man to put up with such an indignity. He would be avenged, he swore, if to be so he had to march to the gates of Fez itself. He landed his crews, and set off to the rescue. But the Moors had satisfied themselves that they were dealing, not with the Portuguese, but with the deadliest foes of King Sebastian; and Drake was met with assurances of goodwill, with presents, and with the promise, honourably kept, that the hostage should be returned. So, having obtained all he sought, and having nothing to gain by delay, he re-embarked his men, and on the last day of the old year sailed away from Mogadore, intending, amongst the islands of Cape de Verde, to make his final preparations for crossing the Atlantic to the shores of the New World.

The weather was stormy, but the ships held together; and so, with

A wet sheet and flowing sea,
A wind that follows fast,
And fills the white and rustling sail,
And bends the gallant mast,

they swept along. Down past the black volcanic cliffs, and vine-clad hills of the Canary islands, and along under the shadow of the great Peak of Teneriffe, hurling up its pinnacle far into the clouds, until, on the seventh day of the new year, they rounded Cape de Guerre, and found their anchorage. For the next three weeks the time passed pleasantly enough. Leisurely they sailed from island to island, seeing all that was to be seen, trading with the natives, and, above all, recollecting the orthodoxy of their "sea-divinity" when a Spaniard or a Portuguese came their way. But their days of ease were rapidly drawing to a close. Already it was whispered that their real destination was the Southern Seas. Had not the rendezvous been given, "the River Plate"? And so, on the 1st of February, the old song was heard once again upon the decks:—

Westward ho! with a rumbelow,
And hurra for the Spanish main, O!

and the fleet stood out to sea; and the islands of Cape de Verde grew less and less, till they vanished beyond the horizon, and nothing was seen save the clouds above sailing before the wind, or the dark waves of the ocean rising and falling as they sped onwards to their goal.

Sea on all sides, and on all sides sea.

For sixty-three days the sun rose out of the waters on the east, and went down into the waters on the west; and the evening and

the morning were the day. Of the wonders they saw, of the sea and all that therein is, and of the heavens over the sea—how the albatrosses followed in the wake, whilst the flying-fish gambolled round the bows; and the Southern Cross hung suspended in the spangled midnight sky—you may read, if 'it interests you, in the narrative of the chaplain. And the fleet stood on.

The sixty-fourth day has dawned. It is the 7th of April. "Land!" The sudden cry of the look-out man, taken and echoed along the crowded decks—"Land! Land! Land!" The dulled, dim line which the trained eye of the mariner distinguishes so easily from the meeting of heaven and sea. There it lies before them, all along their weather-bow, the low, sandy coast fading far away towards the poles, the southernmost limit of tropical Brazil. But the scurvy-stricken seamen were not yet to stretch their limbs on terra firma. The helms were put to starboard, and as the ships ran down the coast, in search of the opening of the Plate, they were struck by a storm, and the *Christopher* was carried out to sea. Still the rest held on. Brazil is left behind, and the flat, surf-beaten coast of Uruguay lies ever on the starboard bow. For a week they have seen nothing of the *Christopher*; and now they have sighted Cape St. Mary, and entered the mighty estuary of the Plate. Away up past the Peak of Cerito, at whose feet to-day the towers and minarets of Monte Video nestle in the sunlight, onwards towards the village of Buenos Ayres, whose roads, to-night, are bright with the lanterns of a thousand ships. A fortnight's rest, spent partly in refitting and partly in exploration, and then they put to sea once more. But before they weighed, they called the name of the spot where they had anchored, Cape Joy, because there the little *Christopher* was given back to them again.

It was part of the plan of the expedition that no vessel should be allowed to separate itself from the fleet without being sought for by the remainder; and soon after leaving the river the wisdom of the arrangement became obvious enough. First the *Swan* disappeared, then the *Christopher* was missing once more, and finally one of the prizes which they had brought from Cape de Verde. There was nothing for it but to put about and look for them. But the loss of time was becoming serious; the weather was growing cold and boisterous, and already winter was upon them. Drake's mind was quickly made up. His ships must be found; but once found, they should give him no more trouble. The squadron was too big; he would destroy the less seaworthy ships, and distribute their crews among the remainder. At last, on the 18th of May, they regained the *Swan*; her men were taken out of her, and then she

was set on fire and cast off. A month later the same fate overtook the *Christopher*; but the prize, which they had rechristened the *Mary*, gave them more trouble, for aboard her sailed the Jonah of the expedition.

Amongst the gentlemen adventurers who had joined the fleet at Plymouth was one Mr. Thomas Doughty. Whether or no, as was afterwards hinted, the man was in the Spanish interest may well be doubted, seeing that there is not an atom of evidence to justify the accusation. At any rate, he was a friend of Drake's, and Drake, who was the last man in all England to have stood upon what, in the Dons, he would have termed the "punctilios," had sufficient confidence in him to place the *Mary* under his command. From that moment the trouble began. Even before leaving the Cape de Verde islands, Doughty appears to have had words with Thomas Drake, and to have reported him to the Admiral, his brother, for helping himself to the plunder; whilst later, probably during the run across the ocean, he was himself called upon to answer a like charge. Drake decided in his favour, but, to prevent further misunderstandings, sent him to command the *Pelican*, whilst he himself remained aboard the *Mary*. Still trouble followed the wretched Doughty; the crew of the *Pelican* growing restive under his command, showed symptoms of mutiny, and Drake, coming angrily back, removed their new captain in disgrace to the *Swan*. But again Doughty was at loggerheads with his companions, and again he was removed, this time back to the *Mary*. Who was to blame in the various disputes it seems almost impossible to gather, so contradictory is the evidence*; but, be that as it may, the *Mary* was now missing, and, rightly or wrongly, Drake seems to have connected her prolonged absence with a plot on Doughty's part to give him the slip. How that could be, seeing that he was no longer in command, seems hard to understand, but before he could do so, if he had ever really intended to try, the *Pelican* came up with him. The *Mary* was burned. Doughty and the crew were transferred to their captor; and then, smothering his anger, Drake stood back. But there was more to come. Maddened, perhaps, by the severity with which he had been treated, the unhappy man became mutinous, and took to croaking. Then the righteous indignation of Drake blazed forth; and his contempt for the craven was turned into fury with the mutineer. His expedition, desperate enough already, would soon become hopeless if seeds of this kind were allowed to germinate;

* An admirably fair account of all these transactions is given in the description of the voyage, edited for the Hakluyt Society.

and he determined to make a terrible example of his friend. It was about the middle of June, and the fleet was standing down the Patagonian coast. Hard by lay Port St. Julian, a name which Magellan had already rendered ominous in the ears of mutineers. The fleet was signalled to make the port, and on the 20th of June they let go their anchors. The crews were landed; the facts of the case were laid before them, and Doughty was bidden to prepare for trial. And then followed a scene at once weird and fearful. There in the dead of winter, amid the frozen snows of the bleak Patagonian coast, under the very shadow of the gibbet at whose feet lay bleaching the bones of the men who had mutinied against Magellan, the Court was formed. Drake himself was President. A jury of men, good and true, with the Vice-Admiral as a foreman, was empanelled; and the trial began. What followed is more or less conjectural; no minutes were kept of the proceedings of that Court, and the accounts even of the eye-witnesses are untrustworthy. That Doughty confessed to some trifling offences seems probable; that he altogether denied the capital charge is certain. The evidence, however, such as it was, convinced the jury; the issue, was placed in the hands of his comrades, and there, grouped upon the beach, they voted, with upstretched arms, for death. Drake pronounced sentence—death by hanging. But the calmness of the prisoner broke down at that, and he pleaded so vehemently that he might at least be permitted to die, as he had lived, a gentleman, that the Admiral consented. The rest is soon told. Whatever Doughty's faults may have been, he met his fate with courage and resignation. For the last time he knelt to receive communion on earth; for the last time he gazed into the eyes of his comrades, as they gathered round, bare-headed, in the solemn silence which men preserve in the presence of death; and then, having embraced Drake, and prayed for the Queen, he stooped to lay his head upon the block. One flash of the upraised sword; and, then, as the hot blood poured out its scarlet stain upon the melting snow, the executioner held aloft the head, and the voice of Drake, firm and unshaken, broke in upon the stillness: "Lo! this is the end of traitors."

Doughty was dead, but there was work for his executioners to do before they turned their backs upon his place of sepulture. What we now know to be the island of Tierra del Fuego was in those days believed to be the northern cape of some immense continent stretching unbroken to the Antarctic Pole. That somewhere between this continent and the southern extremity of the New World, Magellan had found a navigable passage, winding amidst

the glaciers to the Seas of the Pacific, Drake knew, and in that knowledge rested his determination to do likewise. It was true he had no charts, but neither had Magellan; that he had not even a log to guide him, again neither had Magellan. Nay, more, Magellan had not even known, as Drake now did, that such a channel existed, but he had found it; and so would Drake, for where a Portuguese could lead, an Englishman could surely follow, and in that piece of logic lay the inalienable promise of success. Not that he hid from himself, for a moment, the hazard of the attempt. In the dead of winter; with a squadron, the largest of whose ships was but a cockleshell of a hundred tons; with the prospect, if he failed, of a watery grave amid the frozen seas, and if he succeeded, of a fiery one at the hands of the Inquisition, in the unknown lands beyond; he was about to plunge into an uncharted void. In such extremities, it was manifest, the safety of his ships might depend upon the bending of a sail, or the tautness of a rope; and Drake was far too true a seamen to brave unnecessary dangers. The ships were hauled ashore, for a month the crews worked upon them, and everything that human foresight could accomplish to fit them for the dangers of the future was done. And then, the men having taken the communion in a body, and leaving the tiny pinnace where she lay—too fragile to battle with the seas yet to be conquered—the *Pelican*, the *Elizabeth*, and the *Marigold* set sail once more, and three days later entered upon their passage through the straits.

And now there came both mists and snow,
And it grew wondrous cold:
And ice, mast-high, came floating by,
As green as emerald.

The weather was terrible, and the battle with the elements a tough one. Day after day, amid drenching rain or blinding snow, always in intense cold, piloted by their boats sounding in the van, they toiled along. Sometimes, perishing from the cold and exposure, the men were well-nigh fit to lie down and die, and Drake was fain to stay and rest them amid the inhospitable islands which, peopled by sea-lions and penguins, bordered their course. Now the channel lay broad between the low sandy shores, unbroken save by brushwood and clumps of stunted trees; now narrowing rapidly as it rushed between the towering granite cliffs; and now scattering into a thousand courses as, amidst the islands of the opening vista, it whirled and hurried onwards to the ocean. Whilst all around, looming as giants through the wintry mist, robed to their feet with glaciers, their heads, monk-like, hidden

beneath their cowls—cowls of eternal snow, the silent mountains met and joined their hands. But, however long, the longest journey cometh to an end, and so, after three weeks of Herculean labour, they issued from the narrows and stood out upon the bosom of the broad Pacific main. Still from Charybdis to Scylla is but a span; and, in the words of the chronicler, this same Pacific seemed like to prove unto them not so much *Mare Pacificum* as *Mare Furiosum* :—

And now the storm-blast came, and he
Was tyrannous and strong;
He struck with his o'ertaking wings,
And chased us south along.

Hour after hour, with bared poles they scudded before the tempest, whilst the waves rose up like mountains all around them, threatening to overwhelm them. The sun was eclipsed, and there was darkness upon the face of the waters. The hours grew into days, the days added themselves and became weeks; and still, as through perennial gloom, onward fled the fleet. About midnight on the 30th of September the watchers on board the *Pelican*, for a moment, above even the roar of the tempest, heard piercing shrieks and then all was still, saving the thunder of the waves beating against the timbers, or the wind moaning, as it were, amid the yards the Requiem of the dead. For there in the Southern Seas, the goal of all their hopes, the little bark has foundered in her course, and Captain Thomas and gallant mariners "will plough the waves no more." For a month, tossed hither and thither, the *Pelican* and the *Elizabeth* never saw the land until on the 7th of October the wind lulled, and the seas went down, and they sought shelter once more amongst the islands. But scarcely had they let go their anchors than the hurricane was again upon them, and parting her cables the *Pelican* was carried out to sea. The *Elizabeth*, more fortunate, rode safely where she lay; and next day, beating amid the islands, to his great joy, Winter recovered the straits. His agreement with Drake was to meet, if separated, on the coast of Chili. His men knew this, and were all for keeping tryst. But the Vice-Admiral was thoroughly out of heart. Those awful seas had taken the fight clean out of him. Mere courage he had, enough and to spare; those who saw him in the terrible July days of '88, striving single-handed and at once with six great galleons of Spain, or pounding the *San Philip* and *San Matthew* into a jelly, knew that he had "stomach for the fight"; but in that higher courage, that carelessness of hardship and serenity when hope seemed fled, he was deficient.

He overruled his men. The *Pelican*, he told them, was in all probability lost, and if they now left the straits, to keep faith with a phantom ship, the chances were that they would never recover them, but perish miserably in another tempest, like the *Marigold* before them. And so the prow of the *Elizabeth* was turned homeward, and on the 2nd of June she sailed sadly into Plymouth, bearing the news of the failure of the expedition.

And now was the *Pelican* indeed "a pelican alone in the wilderness." But she was commanded by a very different man to the captain of the *Elizabeth*. For fifty-two days the storm blew. "Never," in the quaint language of the chaplain, "hath there been such a tempest, so violent and of such continuance, since Noah's flood." At last the wind, which had seemed eternal, ceased to torment them, and the waters became still, and they were able to make the coast for the supplies they were in such sore need of. For a month they coasted slowly north, looking vainly for their consorts, and endeavouring to obtain stores.

On the 30th of November, as they lay in Philip's Bay, one of their boats, returning from an unsuccessful search, came suddenly upon an Indian fisherman in his canoe. Man and canoe they brought bodily aboard the *Pelican*, and he, treated with kindness and made joyful with presents, told them how it were useless to seek food where they lay, but how southward, at Valparaiso, they would find corn and wine in abundance. And then, taking them to be Spaniards, he offered to be their pilot; adding, incautiously, that they would find there a great galleon, the *Captaine of Moriall*, lading with gold and jewels for Peru.

Here, then, was the reward of all their labours, for they stood on the threshold of the promised land, a land overflowing with milk and honey. If golden Manoa were, after all, a dream, here, league after league, ranging beyond the tropics towards the northern snows, was El Dorado itself, golden with waving maize, purple with vine-clad slopes, fragrant with sandal-wood and balsam; whilst from over and round the mountain wall, day after day, with clash of steel and crack of whip, staggered the slave-trains of the Spaniards, to pour upon the shores of the Pacific the priceless treasures of the land. Cedar from the gorges of the Andes; wine from the vine-presses of Chili; feather-work from the villages of Mexico; gold from the valley of Curimargo; silver from the mines of Potois; pearls from the fisheries of Panama; emeralds from the rivers of Peru; serpentine and diamonds, all alike paid for in Indian blood. So, as with outstretched wings and starting talons the condors of the Andes swoop upon their prey, with

swelling sails and opened ports the *Pelican* swept down the coast.

The sun is high above the "Bell of Quillota," lighting up the harbour of Valparaiso and the white houses of the little settlement upon its shores. There is a stir aboard the *Captaine of Moriall*. For hours a sail has been visible making for the harbour. An enemy? No. No foeman thrusts his head into the lion's mouth; those sacred waters have never yet been defiled by a hostile keel. The rigging is gay with bunting, the banquet is spread, the wine of Chili prepared to pledge the new comers. Nearer and nearer draws the stranger, and now he has entered the harbour and shot up alongside of the galleon. The Spanish drums roll out their welcome. What sound is that? No answering Spanish greeting, but a thundering British cheer. Quit ye like men to-day, ye lords over the Incas; these be no naked Indians, with bows of painted wood, but Devon mariners, whose cutlasses are thirsting for Spanish blood, and whose fingers are itching for Indian gold. The boarders swarmed over the bulwarks and poured aboard the galleon. Thomas Moone, foremost of them all, knocked over the nearest Spaniard, shouting to him as he fell, "*Abassho, pirra!*" "Go down, dog!" Resistance there was none. "They pray to a woman," says an anabaptistical Gunner Yeo, "and they fight like women." Utterly astounded, the Spaniards knelt about the decks crossing themselves and praying for mercy. One, wiser or more daring than his fellows, leaped overboard, and escaped to give warning to the settlers. The remainder were tumbled unceremoniously below, and the hatches battened down.

The galleon secure, Drake was enabled to turn his attention to the settlement. But the alarm had been given, Carrying their valuables, the inhabitants had fled to the hills; and the disgusted explorers were forced to be content with looting the church—an operation which they performed very thoroughly, not even forgetting the relics. Two cruets, a silver chalice, and an altar-cloth, fell to the lot of the chaplain; though, with a loss of memory which becomes habitual whenever sacrilege is in the wind, he forgets to mention it. The rifling of the prize caused much greater satisfaction. Besides 1,800 jars of wine, they took out of her a great crucifix of gold "beset with emeralds," and wedges of gold estimated at 60,000 pesos. And so, having secured their plunder and satisfied their other necessities, they put to sea, and set sail once more towards the Line.

True to his word, and little imagining that Vice-Admiral Winter was sailing gaily home, Drake coasted leisurely along, searching

for signs of the *Elizabeth*. One day, as they wandered on the beach by Tarapaca, they stumbled upon a Spanish soldier asleep by his charge of thirteen bars of silver. "We would not," humorously wrote the chaplain, "could we have chosen, have awakened him of his nap; but seeing we, against our wills, did him that injury, we freed him of his charge, which otherwise would perhaps have kept him waking, and so left him to take out, if it pleased him, the other part of his sleep in more security."

A few miles further down the coast, still searching steadily, they came upon another Spaniard and an Indian boy driving a train of llamas southward to the lading at Tarapaca; and as they could not endure to see a gentleman Spaniard turned carrier, without entreaties, they offered their services, and became drovers instead of him, and so brought the booty, consisting of 800 pounds of refined silver, safely aboard.

Northward flew the *Pelican*. On the 7th of February they were off the port of Arica, where the silver from the mines of Potoso was shipped for Lima. They sailed in. There was no disturbance: silver, not blood, was what Drake wanted, and so long as the Spaniards were willing to let him take it without fighting, he was content to humour them. The ships in the harbour were seized, and their cargoes—some 800 pounds of silver—transferred to the *Pelican*, which in a few hours was bowling northward again before the wind. Where now? Where but Lima? Lima, the capital of Peru! Lima, the seat of the Viceroy of Callao! Lima, where the plate ships were made up for the voyage to Spain! Lima, in whose harbour lay the war-ships of the South Sea! Lima, the head-quarters of the Inquisition in the Indies! Dare they go in there?

It was the evening of the 15th of February. Thirty goodly ships, the proudest in all the southern seas, lay at anchor in the harbour of Callao. Suddenly the *Pelican* sailed in.

The western wave was all aflame,
The day was well nigh done:
Almost upon the western wave
Rested the broad, bright sun,
When that strange shape drove suddenly
Betwixt them and the sun.

Like a curtain from the mountain-tops down rolled the night. Coolly and deliberately, beneath the star-lit sky, the *Pelican* let go her anchors, in the very midst of her foes. One after another, the Spanish ships were boarded. With grim pertinacity the question was put, "Have you silver?" "No!" "Where is it, then?" "Gone, all gone; you are too late. The *Cacafuego*, the great

glory of the South Seas, the richest plate-ship of the year, sailed, Mary be praised! a fortnight ago for Panama." Clearly, there was no time to be lost. The cables of the enemy were cut, the masts of the larger vessels were knocked overboard, and the whole fleet was sent to drift ashore. Then, when the morning dawned, leaving the Viceroy to discover the confusion in his harbour, the *Pelican*, with every stitch of canvas set, and with the foam dashed backwards from her bows, was tearing along the coast northward to Panama. A fortnight ago! It was a long start, but from Lima to Panama was some 2,000 miles, and the *Cacafuego* was heavily laden, literally ballasted with silver. An exact description of her build and rig had been wrung from the prisoners at Lima, and a chain of gold was promised to the lucky man who first desoried her. The first two days passed without adventure; and then, as they neared Truxillo, a sail hove in sight. It proved to be but a small trader bound for Lima; still from her they had news of the *Cacafuego*, who had been passed a fortnight or so before under easy sail. The stranger was sent astern, and the *Pelican* flew on. From Lima to Paíta is 700 miles; the *Pelican* did it in four days, and on the 20th raced into the harbour and pounced upon a ship which lay lading by the shore. The capture was not a great one, merely a wine-ship, but again they had news of the *Cacafuego*, who had touched at Paíta, and gone on her way. And so, having drunk themselves "luck" in good Spanish wine, they started once more in pursuit. For four days they encountered nothing, and then, as they neared Guayaquil, the look-out man cried, "A sail!" All was fish which came to Drake's net. He took her as a matter of course, and in her he took eighty pounds of pure gold and a great gold crucifix, set with emeralds as large as pigeon's eggs. The prize came from Guayaquil, and reported that the *Cacafuego* had left there, and sailed for Panama. But the delay was well-nigh proving disastrous. Drake had no time to spare for fighting, yet, as the plunder was being transhipped, two new vessels came in sight, crawling up the coast from Lima. They were cruisers which the Viceroy, as soon as he had woken up and found that the audacious Englishman had spent the night under his palace-windows, had hurried off in pursuit. The prize was cast off with the message that he was Francis Drake, and ready for the pair. But the pair were not ready for him. Like Cæsar, they came and saw; and then, like the King of France, they went home again. Weeks after, armed to the teeth, they came back again, but this time, like another famous expedition, they were too late. A stern chase is a long chase, but the *Pelican* held gamely on. At last, some 1,100

miles from Lima, as they neared the Line, they spoke with one Gabriel Alvarez, who told them how, but a day before, he had passed the great *Cacafuego* sailing slowly north. The 1st of March dawned; it was St. David's day. From early dawn the men, eager to win the reward, kept ceaseless watch. Hour after hour passed, and still there was no sign of the chase. The sun was high above their head; it was eight bells. Suddenly from the mast-head came a shout of exultation: Thomas Drake had sighted the *Cacafuego*, and won the prize. Drake had no wish to come up with the chase before dark; even now, if she guessed who he was, she might run in shore and escape him. To slacken sail would be to arouse suspicion, for the *Cacafuego* had herself perceived him, and, under the impression that he was a messenger from the Viceroy, was taking in her sails to allow him to come up. Drake cast about for an expedient. His empty water-casks were brought on deck, and these, having been filled, were cast overboard and towed from the stern. The ruse succeeded. The way was taken off the *Pelican*, and the *Cacafuego* unsuspectingly held her own.

The sun plunged into the ocean, with one stride came the night. The casks were hoisted in, and the *Pelican* closed upon her prey. The moon was not yet up. Suddenly, from out the darkness, San Juan de Anton heard a strange greeting, which he could not understand—it was Drake thundering his orders for the Spaniard to run into the wind. There was no reply. Then, as the lightning, with its answering roar, flashes and echoes across the midnight sky, the guns of the *Pelican* spoke over the waters, and the mainmast of the *Cacafuego* crashed overboard. A storm of arrows swept her decks. The captain was down. Drake and his seamen poured aboard, and the great plate-ship was an English prize. And such a prize! Never, perhaps, has so good a haul fallen to the lot of British seamen. The exact value of the plunder was never known; the secret was well kept between the Queen and Drake, but there can be little doubt that it was considerably over a million sterling. Besides twenty-six tons of silver bullion, thirteen chests of royals, and a hundredweight of gold, they found on board quantities of plate and jewelry, and a "great store" of precious stones, pearls, emeralds, and diamonds. The wounded San Juan was brought aboard the *Pelican*, and for a week the two ships cruised in company. Then, having completely ransacked the prize, and being anxious to get on his way home with so rich a booty, Drake restored the captain to his empty ship, and gave him leave to depart. Still, not wishing to be under an obligation to a Spaniard, he first gave him some

linen and provisions—both of which he had captured on his way up—in return for the trifles he had taken out of the *Cacafuego*, and, having thoughtfully provided him in addition with a safeguard, which was to save him further molestation, in the event of his falling in with Winter, he bade him "God speed." Then, as the two ships separated, the pilot's boy, leaning over the gunwale of the Spaniard, shouted to the Englishmen, "Our ship shall be called no more the *Cacafuego*, but the *Cacaplata*, and your ship shall be the *Cacafuego*"; and with that jest they parted. Now, it chanced that, as San Juan sailed moodily back, he fell in with the two cruisers which had been sent to take Drake, and which, fully equipped, were now returning again from Lima in company with a third; and they, having heard his story, crowded on all sail in pursuit of the impudent corsair, and in a few days came up with him. But circumstances alter cases. The treasure of the *Cacafuego* was safe on board the *Pelican*, and Drake was no longer in a hurry. He cared for the three Spaniards about as much as, in after days, he feared the Armada itself. On came the gallant ships of Spain, but, to their horror, instead of flying before them with every inch of canvas set, the Englishman was absolutely shortening sail and inviting them to come on:—

What noble Lucumo comes next
To taste our Roman cheer?

Almost within gunshot the Spaniards faltered, their hearts sank within them, they put their ships about, and, followed by a yell of derision, sailed slowly back to Lima to find more aid. Drake let them go with a laugh; he was not afraid of them, but he had no ambition to risk his precious freight. He waited till their sails had faded over the horizon, and then he altered his course and bore down once more upon the devoted settlements in quest of plunder and provisions. As he neared Nicaragua he fell in with another prize, a Spaniard, bound from China with a cargo of silks and china, all of which he appropriated, together with a falcon of gold curiously wrought and having a great emerald set in its breast. Casting northward by Mexico they came, on the 15th of April, to the settlement of Guatalco. The town-council was sitting, trying some wretched Indians on a charge of arson. Suddenly the Pelicans burst noisily into the court-house. The judges were unceremoniously laid by the heels and sent as hostages, to try their patience, aboard the ship. Supplies were requisitioned, and, to fill up the interval, a house-to-house visitation was instituted. Seeing what was coming, the inhabitants laid hold of their valuables and made for the woods; but the plunderers

were peremptory, and the exodus was stayed. One old gentleman, hurrying off as fast as his legs would carry him, fell in with Thomas Moone, who, seeing his haste, besought him to lighten himself of a heavy golden chain and bag of jewels. By sunset all was complete. And when morning dawned, and the sun, leaping from the mountains, began to climb the heavens, the *Pelican* said good-bye to the sunlit shores of El Dorado, and sailed away towards the Polar star.

San Juan de Anton, talking one day with Drake aboard the *Pelican*, had asked him how he intended to get home. There were several ways, the admiral had answered unconcernedly. The way he had come, through the straits; the way by which Magellan's ship had sailed, by China and the South of Africa; and another, which he would leave him to guess. San Juan had jumped to the conclusion that he meant the way by which Oxenham had penetrated to the Isle of Pearls, namely, across the neck; but Drake, holding, with Frobisher, the belief in the north-west passage, had in reality alluded to that. If somewhere north of Mexico he could only find a passage eastward to the Atlantic, the voyage home would be of small account. Away north flew the *Pelican*, the "burning zone" was left rapidly behind, and they plunged onwards through "most vile, thick, and stinking fogs." For 1,400 leagues the *Pelican* held on. The cold was frightful; the rigging was frozen hard, and the men, who a week before had basked like lizards in the sunshine on the decks, dared hardly uncover their hands to feed themselves. At last, off the mouth of the Columbia, Drake drew rein. The coast, even in the middle of summer, was bleak and despairing, the very "birds not daring so much as once to arise from their nests after the first egg laid, till it, with all the rest, were hatched." It was plain, either that no passage existed, or, if it did, that it would not be worth while to pursue it. The ship was put about, and, coasting south, they anchored, on the 18th of June, in the harbour of San Francisco, at the threshold of the Golden Gate. The good ship *Pelican* had sprung a leak, and Drake, mindful of the value of the cargo, and the great distance he was yet from home, landed the crew; and, having built a fort, brought the treasure ashore, and set to work to repair her hull. The natives accepted the encroachment with the greatest amity, and, taking the pale-faces for "gods," sent them presents of potatoes and tobacco, whilst, to show their reverence, they held a great festival and offered up sacrifices. Three days later the garrison beheld a great procession winding slowly down from the hills; it was the King coming in state to visit the

"gods." First marched some grand official, bearing the sceptre, from which were suspended the crown and chains of State; then, surrounded by his mighty men of war, came the Híóh, or King, decked with feathers and wearing a mantle of rats-skins reaching to his waist; whilst the rear was brought up by a crowd of naked savages, all having their faces painted, and each bringing in his hand some gift. And they, being entered into the fort, did then and there crown Drake lord over California; and he, accepting their homage in the name of his mistress the Queen, set up in mark of her dominion a great post of wood, to which was fastened her image and superscription in the shape "of a peice of sixpence, current English money." For a month the *Pelican* lay in the harbour; and then, all being ready, the crew re-embarked, and, to the great sorrow of the natives, set sail eastward ho! The terrors of the north were left rapidly behind; for fully sixty-eight days they saw no land as they sped back into the tropics.

We came to warmer waves, and deep
Across the boundless East we drove,
Where those long swells of breaker sweep
The nutmeg rocks and isles of clove.

At last, as the September days were closing in, the *Pelican* bore down upon the Moluccas. Feeling his way cautiously through the treacherous channels of the Archipelago, Drake, after a short visit to the King of Ternato, slipped by the coast of Celebes and brought up at a small, uninhabited island to the south. Here they stayed for a month. The ship was scraped and thoroughly overhauled; whilst the men, weakened by scurvy and exposure, grew hale and hearty with rest and the good things of the tropics. All, however, were longing to be at home again, and so, on the 12th of December, they put once more to sea. But their troubles were by no means over. For a month they crept about amongst the islands, utterly unable to find a passage through the reefs. At last, on the 9th of January, they found an opening and shot along under full sail. The night closed in, a black tropical night, without moon or star. Suddenly, in the first watch, the keel of the ship grated harshly on the rocks: in a moment the *Pelican* was hard and fast upon a sunken reef. The situation was desperate. At present it was calm, and not a sound could be heard, save the gentle sighing of the wind and the lapping of the waves upon the rock; but if the wind or tide should rise, the ship must go to pieces in an hour. The crew were mustered; and then, all kneeling in the darkness on the deck, they besought God's help in their extremity. As soon as prayers were over, Drake addressed the company. God,

he told them, helped those who helped themselves; if only anchor hold could be found, they would haul the ship off yet and get safely home. The boat was lowered, and the Admiral himself went over the side, sounding-line in hand. In a little time he climbed back again; only a boat's length from the ship he had failed to bottom; there was nothing for it but to commend themselves to the mercy of God, and await the end with courage. There was no confusion; the men had looked death too often in the face to be unnerved. If it were necessary to die, they would die at their posts; for to have escaped on shore, even if it had been possible, would only have been to exchange death for captivity. The morning dawned; and then, after another unsuccessful attempt to find anchorage, they gathered on board to perform divine service, and celebrate the sacrament. A determined effort to float the ship by lightening her, failed; guns, ammunition, and even food were thrown overboard in vain. There seemed no hope. Gradually, as the tide rose, the wind lulled. The *Pelican* heeled slowly over on her side; the end was at hand. Suddenly, righting herself in the rush of the incoming tide, the gallant little ship reared aloft her masts, and plunged down from the reef into the deeper waters, not only safe but sound.

For two whole months longer they struggled to get clear of the islands; and it was not until the 26th of March that, putting to sea from their last resting-place by the island of Java, they met the great swell of the ocean, and knew that they were free.

Drake was in the highest spirits. His voyage had been successful beyond his most ardent anticipations. He was the first Englishman, as he was the first captain, who had sailed his ship round the world. He was proud of his little *Pelican*, and still more so of his men. But there was one exception. Ever since what he was pleased to call the "bloodie tragedie" of Port St. Julian, the Reverend Mr. Fletcher, "ye falsest knave that liveth," had shown signs of want of faith. The symptoms, which had first developed themselves on that awful night when the *Mari-gold* went down off Cape Horn, had come to a crisis when the *Pelican* was herself in danger on the reef, and his services were most required. As the Queen's representative on board the *Pelican*, Drake held himself head, not only of the ship, but of the Church. The chaplain was subjected to a mock trial. Seated on a sea-chest, with a pair of pantouffles in his hand, Drake pronounced him excommunicated, cut off from the Church of God, and utterly given over to the Devil. For a day or two he underwent penance, chained by his leg to a ring-bolt aft the foremast, and then he was

absolved and received back into the bosom of the Church and the ship's company.

Merrily homeward flew the *Pelican*. There was no Vanderdecken to shadow his baleful phantom across their course; and so in calm, clear weather, they swept round the foot of Table Mountain—"the most stately thing and fairest cape we saw in the whole circumference of the earth"—and having watered at the mouth of the Tagoine, and supplied themselves with oysters and with lemons, they sailed proudly into Plymouth on the 26th of September, having, in the quaint language of the historian, succeeded "in first turning up a furrow about the whole world."

Thy glory, Drake, extensive as thy mind,
No time shall tarnish and no limits bind;
What greater praise! than thus to match the sun
Running that race which cannot be outrun.
Wide as the world thou compass'd spreads thy fame,
And with that world an equal date shall claim.

Of the political events which followed—how Mendoza demanded Drake's disgrace, and the Queen replied by sending for the pirate to Court; how the ambassador demanded an account of the plunder, and Elizabeth presented him with a cooked return; how Her Most Christian Majesty stood firmly by Drake and the spoil; and how the Pelicans flaunted their stolen finery in St. Paul's—there is no time to tell.

The course of the *Pelican* was run, but not that of her captain. The Spanish Main has to be ravaged yet once more; the King of Spain's beard must be singed; and Sidonia made to wish himself at S. Mario, among his orange trees; before, under the shadow of the mountains of Panama, in the harbour of Portobello, Francis Drake goes aloft for the last time. And then the solemn tones of the Service for the Burial of the Dead at Sea rose up in that great cathedral of nature, whose piers are the mountains' summits, and whose vaulting is in the clouds; and as the surf pealed out its organ-thunder upon the shore, his body was given to the deep, to sleep in that vast God's-Acre of the mariner, where the graves are hollowed in the depths of the ocean, and the monuments are pillared in coral, fretted with the web of myriad-tinted sea-weed.

The French Conquest of Algeria.

By Lieut.-Colonel H. HILDYARD.

(Continued from p. 82.)

PART II.

THE news of the disaster of la Macta created a great sensation in France. Reinforcements were promptly prepared, and Marshal Clauzel was appointed to the chief command in Africa. On his arrival at Algiers, in August 1835, he found the French army on the defensive at every point. The Oran division was shut up in the garrisons on the coast, the country being in possession of Abd el Kader, supported by the whole Arab population, as well as by the resources of Morocco. The Algiers division, harassed in its lines by the Hadjoutes, was further threatened by the powerful organisation created by the Emir amongst the populations of Tittery. At Bougie hostilities were at their height, while the Bona division was stationary, observed by Achmed, Bey of Constantine, who based his movements on Tunis, and was supported by Turkey.

The Marshal, rightly appreciating the situation, recognised the necessity for prompt action, and the direction in which it should be exerted. He determined to concentrate his efforts in the province of Oran, and endeavour to wrest from the Emir the city of Mascara, where his seat of Government had been established, an achievement which, if successful, would be a severe blow to his resources and power. A simultaneous plan for the general subjugation of the country it was out of his power to execute, on account of the weak effective at his disposal. The army had just been reduced by 5,000 men, by the withdrawal of the foreign legion, comprising the best elements of the force. Reduced to nominally 25,000 men, the actual strength was little over 20,000, owing to a virulent epidemic of cholera.

It was not until towards the end of November that the division was organised at Oran for the expedition to Mascara. It was composed of four brigades with two mountain guns attached to each, and a reserve, numbering in all about ten thousand men. To

supplement the insufficient means of transport, a convoy of nearly eight hundred camels was organised, a method of transport not previously employed by the French, and without which the expedition could not have been carried out to a successful issue, for the ordinary train was only sufficient to carry six days' provisions.

The French column moved, without serious opposition, to the Sig where it encamped some days, and defeated Abd-el-Kader in an engagement, to which he was enticed by means of a reconnaissance in force. He then retired, and took up a strong position across the route leading from the plain to the Habra, which the French must follow. Secured on one flank by the Atlas range and on the other by thick wood, his front was protected by two deep ravines, behind which was a cemetery, surrounded by walls and aloe hedge. The regular infantry were disposed in the ravines and the cemetery, the wood was occupied by irregulars, and three guns were posted advantageously for defence, so as to enfilade the column during its advance. The entire cavalry, consisting of about ten thousand horsemen, were collected on the lower slopes of the mountains, ready to be launched against the right flank. The position could not have been better chosen or more skilfully occupied, and there was this additional advantage, that in it were situated the Saint-houses, dedicated to Sidi Embarek, which offered an encouragement to the fanaticism of the Arabs.

It was not until late in the day, after a hot and trying march of ten hours, that the French approached this formidable position. An immediate advance was made against it by three brigades formed in echelon. The Arabs reserved their fire until close range, but it was helpless to check the advance; the brigade charged the regulars and cleared the ravines, the cemetery was carried by the second brigade, while the third brigade drove the tribesmen from the wood. In the meantime, an attack by the horsemen was met and repulsed by the cavalry. The success was complete at all points, the Arabs abandoning the dead and wounded in their flight, and the defeat of the Maata was fully avenged, with a loss of only forty men.

By this victory the road to Mascara was opened; for the time Abd-el-Kader's prestige was at an end, and he was formally deposed by the tribes from the proud position he had occupied. Mascara was abandoned after being pillaged by the Arabs, and the Jewish population massacred.

On entering the city the French found twenty-two guns; and large stores of provisions and munitions of war, which were destroyed, as well as a small-arm manufactory, the loss of which was

a great blow to the Arabs. When the work of destruction was completed, the return march to Oran, by Mostaganem, was commenced, in the course of which the troops were exposed to great hardships and privations from the inclemency of the weather and the want of supplies; the camel convoy, imperfectly organised and controlled, having dispersed—the camel-men intent on plunder.

It was not until the 21st December that the last of the regiments that took part in the expedition had returned to Oran, but notwithstanding the unfavourable time of year, and the state of health of the troops that had suffered from the privations of the campaign, the Marshal determined upon taking the field again without delay, with a view to completing the work he had begun, before his adversary could recover himself sufficiently to oppose any considerable opposition.

On the 8th January he set out for Tlemcen with a column numbering 7,500 men, and composed of nine battalions, six squadrons, four companies of engineers, with eight mountain howitzers, four field-guns, and a rocket battery, organised in three brigades. His experience of a camel convoy was not such as to lead him to repeat the experiment, and his transport was composed of four-wheeled wagons, which were only sufficient in number to carry eight days' provisions. Since the occupation of Algiers, Tlemcen had been invested by the Arabs, who were untiring in their efforts to reduce the garrison of Turkish half-breeds, bravely commanded by Mustapha ben Ismail, who was now reduced to the greatest extremity. This intrepid garrison had held its own for six entire years against the tribes, fighting day after day, insufficiently armed, exposed to the greatest privations, and cut off from any expectation of relief.

A march of five and a half days led the French column into the Tlemcen plain, without encountering any opposition, and Mustapha transferred to the French commander the place he had so obstinately defended. The first object of Marshal Clauzel was to gain over the tribes in the neighbourhood of the place, which could alone be effected by demonstrating the superiority of his arms over Abd-el-Kader, who had established himself with what following he could collect in the mountains.

Without any loss of time a column, of which Mustapha and his Turks formed a part, was despatched against him, under General Perregaux, who completely routed him, seized his camp, and Abd-el-Kader owed his personal safety solely to the fleetness and endurance of his horse.

The next point was to open direct communication with the sea

at Rachgoun, already in the occupation of the French, and only fourteen leagues distant, whereas Oran was thirty-five. The route from Tlemcen follows the bank of the Sikkakh to its junction with the Isser, and thence by the river Tafna to the sea. After making the necessary arrangements for the march and for the reception of his column at Rachgoun, the Marshal set out; but whether from the discovery of his intentions, or from divining them intuitively, on arriving at the junction of the two rivers, Abd-el-Kader was found to have occupied in force the rugged banks of the Isser.

A fugitive, after the rout of his small force in the vicinity of Tlemcen, without following, and his prestige seriously impaired, this extraordinary leader had yet found means to enlist under his banners a numerous army, for the most part composed of contingents from the neighbouring State of Morocco. To these were added the nucleus of regular troops still faithful to him, and the warlike tribes inhabiting the mountainous districts between the Tlemcen plateau and the sea. The French column, 4,000 strong, with six guns, found itself in the presence of from five to six thousand of the enemy, occupying strong positions on both banks, access to which, with the train which accompanied the column, was impossible.

The Marshal encamped, on the night of the 25th January, on the peninsula formed by the junction of the two rivers, thus leaving the enemy in uncertainty as to which bank he would operate by. The next morning, leaving his impedimenta there, he crossed to the right bank of the Isser, occupied by Abd-el-Kader and the Moors. The enemy's centre was broken through by the impetuous onslaught of Mustapha, followed by the native auxiliaries, who, wheeling to their left, and, supported by the Chasseurs d'Afrique, and a regular battalion, swept all before them up to the rugged bank of the Tafna, while the enemy's left was driven back and separated from the rest by the African battalion. The Moors made a desperate resistance, but were disastrously routed, and the standard of their leader was only saved by the splendid bravery of its bearer, who, when pressed, deliberately spurred his barb over the precipice overhanging the Tafna, to meet a certain death.

But, decisive as the victory in itself had been, all was not yet over. Abd-el-Kader was not the man to give up while a pawn yet remained on the board. Numerous reinforcements from Morocco arrived during the night, and a reconnaissance, sent out on the morning of the 27th by the Marshal, hastened back to inform him of the advance in force of the enemy, who had descended from the

mountains and posted themselves between the French camp and Tlemcen. The situation was critical in the extreme; reduced to 8,500 men, the French column was cut off from its base and hemmed in against the mountains by a force more than double its own strength.

No time was lost in taking up a position along a ridge running perpendicular to the Tlemcen road, and its occupation was hardly completed before the enemy began their attack, advancing in good order with an advanced guard and a reserve. The attack commenced with great impetuosity, but before it was pushed home a pause suddenly occurred, and the enemy then rapidly withdrew, a movement quite inexplicable at the moment, but which proved afterwards to be due to the approach of Perrigaux's brigade, which had been ordered up from Tlemcen.

The first impulse of the Marshal was to push on at all hazards; but he had the good sense to recognise the insufficiency of the results to be gained by such a proceeding, as compared with the risk to be encountered and the serious consequences which must follow the failure of the attempt. He therefore fell back upon Tlemcen, and, leaving there a small garrison with provisions for twelve months, marched back to Oran. Although the only course that could be dictated by prudence, it had the natural result of raising again the prestige of Abd-el-Kader, as was plainly evidenced by the manner in which the return march was harassed by the Arabs, though its skilful conduct prevented any serious interference with it.

The Marshal now returned to Algiers, taking with him the Zouaves and part of the artillery and engineers, and left General Perrigaux to continue the operations as best he could with the limited force at his disposal in the province of Oran. With these insufficient means the General performed all, and more than could have been expected of him; and by his perseverance and tact towards the neighbouring tribes, he succeeded in gaining them over and setting up a rival power to that of the Emir.

In April 1836 the Marshal organised an expedition from Algiers, which was crowned with the happiest results. He proved to the Arabs that their rugged mountain passes offered no obstacle that could hinder the victorious advance of his soldiers, and he was only prevented from gaining more valuable and permanent results by the definite orders received from France, which forbade his occupying any new positions.

By the winter campaigns in the two provinces the Emir, repulsed at every point, had been deprived of his resources, as well as his

prestige, and reduced to limit his operations to the territory bordering on Morocco. The spring, the most favourable period of the year for campaigning, seemed now to offer the opportunity of finally crushing his power. But at this critical moment a notable proportion of the best troops were recalled to France, and those remaining in Algeria were reduced by the insufficiency of their numbers to a most regrettable inactivity.

There was one exception to this, in the Oran division, which was forced, in spite of every disadvantage, to take the field with a view to opening up from the sea at Rachgoun the route to Tlemcen, which the Marshal had failed to do some months previously. General d'Arlanges, who had succeeded to the command of the division, set out from Oran, on the 7th April, with about three thousand men, and on the 15th found himself in the presence of the Emir and a numerous force. He was about to enter a difficult and long defile, and could only be induced first to take the offensive by being committed to it by Mustapha, who led the native auxiliaries, and saved him from a most dangerous movement. A hardly-disputed engagement ensued, in which the French were successful, but the victory was by no means decisive; but the General could not be persuaded to hold his ground until he should be able again to measure his strength with Abd-el-Kader. All the remonstrances of Mustapha were of no avail; the march was resumed, and the rugged defile was traversed which, while conducting the French to the sandy shores which fringe the embouchure of the Tafna, closed as a door all power of exit behind them, and it was barred by a force superior in its fighting qualities to any that had hitherto combated under the Emir's standard, composed almost entirely of the warlike hill-tribes, or Kabyles, descendants of the original occupants of the country, and far more formidable than the Arabs.

Notwithstanding the counsels of Mustapha, whose keen native instinct alone seems to have appreciated the danger, the General had entered the trap which had been left open for him. Nor does he appear, even then, to have recognised the position in which he had placed himself, or to have taken the ordinary precaution of informing himself accurately of the dispositions of his opponent. The Emir, on the other hand, did all in his power to deceive him regarding these, carefully keeping back the bulk of his force, swelled hourly by the arrival of fresh contingents. His outposts alone were to be seen, and these obeyed loyally the instructions they had received to fall back before any advance of the French.

The General, unable to gain any information of the enemy by

ordinary means, determined to undertake a reconnaissance in force, so as to clear the way for a definite advance. With this purpose he crossed to the right bank of the Tafna, during the night of the 24th of April, with the bulk of his division, 1,800 strong, hoping to take the enemy by surprise in the morning. The infinite pains exerted to effect this object were, unfortunately, rendered useless by the advanced posts firing on an Arab patrol. Advancing westwards, after daylight, an outpost was encountered, driven back and followed up by the fire of the artillery. This proved a signal for the rallying of all the hostile forces, which were skilfully concentrated without showing themselves or interfering with the French advance.

It was only when the column halted, after marching for upwards of two hours, that Abd-el Kader gave the signal for attack. Happily, perhaps, for the French general, the Emir made the mistake of dividing his forces. Two thousand of his force were detached to attack the remainder of the French division, which had been left in charge of the sick and impedimenta on the shore. This attack failed, owing to the energetic defence made by the small force of 600 men under Colonel Lemercier.

Notwithstanding this detachment, the Emir's force still outnumbered the column under General d'Arlanges by four or five to one, and pressed furiously upon it directly it attempted to retire. Separated from the camp by two leagues of broken country, in which the artillery could seldom come into action, and had even the greatest difficulty in moving at all, without transport for the wounded, the General found himself in a most serious position, from which he was alone enabled to extricate himself by the brilliant behaviour of the troops under him. Retiring from knoll to knoll, covered by the repeated and daring charges of the few squadrons of cavalry with the column, the infantry were enabled to keep a firm front to the enemy, while the guns, coming into action wherever it was possible, made great havoc in their crowded ranks. Large, however, as were the losses suffered by the Arabs, they had little immediate effect upon the attack. Those who were not struck down by the deadly fire pressed on, nothing daunted by its effect, until the safety of the guns depended upon a mortal hand-to-hand conflict around them. At the same time, the mountaineers poured through the advanced line, carrying the skirmishers back with them, and threw themselves upon the two small columns forming the reserve and last resource of the French. These, formed each of only four companies, stood firm; by a rapid bayonet-charge they secured the safety of the guns, and afforded time for the for-

mation of the advanced troops. By their gallant conduct both space and breathing time were secured, and fresh heart was given to the detached units which, surrounded upon all sides, though fighting with desperation, had previously had no hope of saving more than their honour. It was, indeed, the turning moment of the day; the Arabs, exhausted with their long-sustained and desperate efforts to overwhelm the little column, lost heart in proportion as the French regained it, and at mid-day they drew off and allowed the latter to complete their retirement to the camp, where ships awaited them.

Had the whole of the French perished, as seemed at one phase of the affair of Sidi Yacoub, as it was called, the probable result of the combat, the consequences could hardly have been more fatal to their prestige or more favourable to that of the Emir. From every side the tribal contingents flocked to his standards, and at every point still occupied by French garrisons the toils were drawn closer around them, and the investing forces became bolder. Already the Emir regarded Tlemcen and its garrison of 500 as in his power; and closely shut in, insufficiently supplied with provisions and stores of all kinds, their fall could alone be averted by early relief, of which there appeared no prospect.

The French Government, by its constant reduction of the army in Algeria, now numbering in all only 21,000 men, scattered here and there in the numerous garrisons and posts often great distances apart, was chiefly, if not solely, responsible for the helpless condition to which these were now reduced. But it had been no part of their programme to allow the conquest to slip altogether from their grasp. A strong brigade under General Bugeaud was promptly despatched; but some weeks were lost by the squadron proceeding, in the first instance, to Tangier to remonstrate against the co-operation of the Moorish contingents.

It was not until the 1st of June, six weeks after the combat of Sidi Yacoub that Bugeaud disembarked with his troops at the mouth of the Tafna, where, in the meantime, the remnants of General d'Arlanges's column had been suffering the greatest privations, their ships having been driven off by a storm. His first measures were characteristic of the independent and confident spirit of "*le père Bugeaud*," as he came to be known by the soldier in Africa. He had no personal experience of warfare in that country; but he had closely watched events there in the preceding five years. The result of his judgment upon the military conduct of the several campaigns was to the effect that any movement beyond a simple reconnaissance should have a definite objective, and that the column

undertaking it should be so constituted, equipped, and provisioned as to render the attainment of this objective morally a certainty.

To such a proposition no one could demur; and the generals who had preceded him would have been the first to adopt it as their own. But Bugeaud interpreted it in a different way to what they did. Each and all of them had been hampered by the wheeled transport, which made rapid and assured marching in the mountainous country impossible, while restricting their movements at all times. Bugeaud determined at once to remedy this state of things by embarking the guns and artillery wagons, and substituting pack in place of wheeled transport for provisions and small-arm ammunition. In doing this he violated all the accepted principles of African warfare, and drew down on himself the temporary distrust of those who had already fought in the country.

Convinced, however, that to ensure success it was an indispensable condition that the mobility of his troops should be equal to that of the enemy they were called upon to cope with, he insisted without wavering upon carrying out his idea, and counted upon success in the first engagement to restore to him the confidence of those under his command. The means at his disposal for the formation and equipment of a pack-train were of the smallest, and were quite inadequate to enable him to undertake at once the relief of Tlemcen. But within four days, by the aid of some old sails and plaited straw, packs for 300 horses were improvised, which furnished carriage for six days' provisions, an amount sufficient to carry the force to Oran.

On the night of the 11th June he set out, following the coast, and succeeded, by a long and rapid march, in gaining a sufficient start on the Arabs to preclude them bringing the bulk of their force to oppose him, and allowed him to reach Oran in safety, without serious fighting, on the 17th. Here the organisation of the pack transport was improvised and increased to 500 camels, 300 mules, and several hundred donkeys—sufficient to carry a month's provisions both for the column and for the Tlemcen garrison. As soon as all the arrangements were completed the march upon that place was commenced, and its relief successfully effected without any serious engagement. Without wasting time at Tlemcen, Bugeaud then moved straight upon the Tafna, where he proposed to obtain a further supply of provisions for the garrison. The Emir was ready to dispute the way, as he had previously done with success against Marshal Clauzel; but the French column, led with great skill, succeeded in giving him the slip and reaching the Tafna unopposed.

In returning to Tlemcen, the loaded convoy restricted somewhat the general's movements, but again he succeeded by a stratagem in misleading the Emir as to his intentions. By this means he avoided fighting at a disadvantage in the mountain passes near the junction of the rivers Isser and Tafna, and made it imperative upon the enemy either to allow him to enter Tlemcen unmolested or to attack him in the plain, where every advantage would be on the side of the French.

The engagement of Sikkack, that ensued, commenced at daylight on the morning of the 6th July, by the furious charge of a mass of 6,000 Arab horsemen, which was checked by the fire of the French square formed to meet it, and was not pushed home. The Emir himself led the reserve of regular infantry to the support of his cavalry, but this, after being disorganised by the French fire, was successfully charged by the Chasseurs d'Afrique, who, carried away by their success, dashed on against the infantry, and carried disorder and dismay into its ranks.

The victory was assured; and the French infantry, closely following the cavalry, only served to render it more complete and the enemy's losses greater. The results of this brilliant affair, in which 8,000 French and 14,000 Arabs were engaged, were very great; but at this time the insurrectionary movement had gained such force and consistency, and the prestige of Abd-el-Kader had become so great, that it was no longer possible to arrest it by a single blow. For the moment the enemy's army was crushed and dispersed, but only for the moment; the belief of the tribes in the star of their chosen leader could no longer be shaken by a temporary reverse, and it was not long before they were again flocking to his standards.

General Bugeaud had now acquitted himself of the task entrusted to him: any further operations were neither justified by his orders nor desirable with the weak effective at his disposal; and he returned to France, leaving to Marshal Clauzel the ungrateful task of carrying on the war with the very insufficient means available.

On his return to France, Bugeaud's energies were devoted to endeavouring to persuade the Government to adopt a policy in regard to Algeria. He represented that, although seven years had elapsed since the French troops landed in the country, they were as far off as ever from any settlement. There were but two practical alternatives open—to abandon the country or to conquer it; but the Government could not adopt the former on account of the popular feeling against it, and they would not make up their mind

to the latter. The middle course followed, of a limited occupation by utterly inadequate forces, was the very worst that could be adopted, and could lead to no good results.

His counsels did not prevail; and on his returning to the command of the forces in Algeria, the active division of which was now reduced to 12,000 men, he negotiated a treaty with the Emir by which the latter was granted independent sovereignty over the whole interior, without tribute, and given a port. This arrangement was, at the best, an expedient which could not be expected to last beyond the time required by Abd-el-Kader to consolidate his power and complete the organisation of the tribes. The condition of affairs was in a few months as bad as ever again, and the result of a campaign conducted by Marshal Valée in 1840 was so unsatisfactory that in the autumn of this year Bugeaud was sent out again to replace him as Governor-General.

His complete knowledge of the country and the tribes, derived from long experience, allowed him from the moment of his landing to grasp the situation and to enter upon the task before him systematically. He fully understood it was not a regular or organised army he would have to contend with, but the population itself. And this population did not consist of nomads, as was generally thought, though the inhabitants were more moveable than those of Europe. Each tribe had its defined territory, which it could only leave with difficulty when forced to find pasture for its flocks, and to which it was always forced to return. The occasion did not, as in Europe, demand the collection of large armies destined to encounter similar masses. What was required was a number of light columns, by which the country could be rapidly traversed and the tribes controlled. Everything that could encumber the troops on the march was to be renounced, and magazines established in various positions so as to dispense with the necessity for carrying much provisions.

His object was to strike the enemy in his basis of operations and points of political support, to reach the material interests of the hostile populations, and thus to demolish Abd-el-Kader's power bit by bit. The expeditionary columns were usually composed of from three to four battalions, two squadrons, two mountain guns, and a pack train. Their order of march was, cavalry in advance, followed by the main body, the guns, ambulances, train, and cattle, the rear being closed by a strong guard. The soldier carried only his rations, ammunition, and arms.

In April 1841, the provisioning of Médéah was effected, and in the following month that of Milianah, which led to an important

engagement on the banks of the Chéelif, where the Emir's forces were defeated and dispersed. In the same year, expeditions were made to Tackdempt, Baghar, Thaza, Mascara, and Saïda. During these, the force was chiefly provisioned in grain, by means of reaping and threshing out the harvest, or from the *silos* in which the Arab grain was stored. Lamoricière's column marched twenty days, carrying with it only four days' grain, and the Arab hand-mills for grinding it. Apart from this it was entirely supplied from the *silos*, which were searched for by an extended line of men two leagues in length.

The year 1841 was, in effect, the real year of the conquest of Algeria, the force employed for the purpose being nearly seventy nine thousand men, including native auxiliaries. But much remained to be done. In 1842, Tlemcen and Sebdoû were seized, and towards the close of it the apparently inaccessible mountain ridge, crowned by the peak of Ouarensenis, was invaded, and, the retreat of the tribes being blocked, they were forced to submit. The following year saw similar rapid movements repeated, and Abd-el-Kader was so hardly pressed that the Duke d'Aumale, by a brilliant though rash advance with a handful of men, succeeded in capturing his *smalah*, or head-quarter camp, with its guard of five thousand men, together with the wives and women of many of the Arab leaders, and a quantity of cattle. The mother and wife of the Emir alone succeeded in escaping.

This serious blow to the prestige and resources of the Emir was effected by a column only 500 strong, which succeeded in completely surprising the camp by means of a rapid march, in which it covered thirty leagues in thirty-six hours. It was by such bold movements as this that Abd-el-Kader's power was sapped, and the tribes were taught that there was no security for them from the conquering columns. That the movement was a rash one there can be no doubt, and it could only be justified by success, for the infantry, which formed the only possible support, was left at a distance of nine leagues behind. Bugeaud, who was too good a soldier to leave success altogether to chance, pointed out the danger of the movement in an unknown country, and without any certain information of the enemy's strength.

Driven now from his chosen positions, which he had vainly regarded as secure from the inroads of the invader, Abd-el-Kader, though discouraged and cut off from his resources, did not despair. He moved, with such force as he had still remaining to him, towards the Moorish frontier, collecting to his standards the local tribes as he went. Here, near Ouchda, a Moorish force was col-

lected to assist his cause, composed of 6,000 Bokhari, the Sultan's black mounted guard, 1,200 picked Askari, or regular infantry, and about sixty thousand horse, being contingents from the tribes in the eastern portion of Morocco.

Bugeaud, who had information of the concentration of this numerically strong force, pushed forward at once with 6,500 infantry and 1,500 horse, and seized Ouchda. On the 15th July 1844, he determined to attack the Moorish camp, which was approached by a night march, unperceived; but the Moors, when day broke, had time to mount, and completely surrounded the French. Bugeaud compared his formation—which was in three columns in echelon with both flanks retired—to a boar's head, the centre column being the snout and the flank ones the tusks. There were in all twelve battalions, of which two were in reserve, in close order, and the rest were ready to assume the defensive by forming battalion squares on a lozenge-shaped outline, inside which were the guns ready to fire through the intervals, the cavalry prepared to move out when required, and the impedimenta.

The Moorish horsemen charged the small battalions with great impetuosity and bravery, in masses of four to five thousand; but in every case the French infantry, reserving their fire till the enemy were within short range, and then pouring in well-sustained volleys, succeeded in holding their ground unshaken and repelling the charge. The steady advance was hardly checked, and when, shortly, the enemy's confusion became evident, the cavalry was launched against them and completed their defeat.

This victory of July, achieved by the careful preparations and excellent arrangements of Bugeaud, was justly regarded as the crowning act of his military career, and he was rewarded for it by the title of Duke d'Isly. The result of it was an enormous increase in the prestige of the French arms, which was unhappily neutralised in part later in the year by the destruction of a French column by Abd-el-Kader at Sidi Brahimi. The force, consisting of 60 cavalry and 850 infantry, had advanced unsupported, was surrounded, and, after the ammunition had been exhausted, they were killed to a man. It was a striking justification of the orders so frequently reiterated by Bugeaud, that such isolated movements were not to be made, as little could be gained by them while much was risked.

In the course of the winter of 1845-6, the conquest of the country was completed, with the exception of the mountains occupied by the Kabyles, the original and hardy stock of the country.

During the campaign, as many as eighteen columns were in

motion, and, though it was not fruitful in combats, it was the most extended and effectual of any. The rapid and sustained marches and countermarches, without pause or rest, were only rendered possible by the fact that the army was composed of men inured to exertion and acclimatised to the country. As an example, on one occasion, in March 1846, Camou's column covered eleven leagues in pursuit of the Emir, without water. Abd-el-Kader succeeded, however, in evading this, as well as all other efforts to reach him, and even made an incursion into the plains close to Algiers. But here his fortune forsook him; his followers, surprised by a night attack, deserted him, and he never recovered from the check. The campaign lasted five months and was one of continuous effort; but it was well repaid by the final conquest of the plains. In the following year the work was completed by the invasion and seizure of Kabylia, the difficulties of which lay in the broken nature of the territory and the excessive heat. A column of 8,000 men, under the command of Bugeaud, forced its way into the heart of the rocky fastnesses, and completed its task by the successful assault of the fortress of Azrou, situated in an almost inaccessible position, which had for its result the submission of the Kabyles.

It was Bugeaud's last fight, and he returned to France, after having succeeded, by his ability, activity, and determination, in securing for his country the fair provinces which had been so criminally allowed to slip almost from her possession during the years succeeding the first occupation of Algiers. There are many lessons to be learnt from the successive expeditions, marches, and combats of which a brief record has been given. Of these, the most important is undoubtedly to be learnt from the example of the useless expenditure of blood and money which was entailed by the vacillating policy, or, more rightly, the want of policy of the French Government. In 1881 the force in Algeria was reduced, from motives of economy, to little more than seventeen thousand men, when thirty thousand, properly found and equipped, could have occupied the country. Five years later, in 1886, that force was actually in Algeria; but it was then too late, and again the Government could not make up their mind to act decisively. And so things went on, the force having to be steadily increased as the power of Abd-el-Kader became more and more consolidated, until, in 1846, after sixteen years spent in an almost constant state of war, it required the presence of nearly a hundred and eight thousand men to effect the final conquest and settlement of the country.

But, if the Government were long in arriving at a policy, they were, at least, favoured, when this moment at last came, by having at their disposal such a commander as Bugeaud to carry it out. Those who had preceded him, acting, it must be admitted, under manifold disadvantages, failed either to appreciate properly the necessary conditions of warfare to ensure any permanent success against the enemy to whom they were opposed, or to organise the troops under their command in a manner to allow of their operating with effect in a country the nature and climate of which necessitated special arrangements. The small garrisons were further weakened by permanent posts being pushed forward into the enemy's country, which served only to court attack, and could not be provisioned or withdrawn without relief expeditions being sent to them. The expeditionary columns themselves were constituted without regard to the country in which they were to operate, and in place of gaining an advantage by means of rapid and unexpected movements, were reduced, by the unwieldiness of their transport, to leave the initiative to their opponents. Incomplete success was ordinarily the best result of hard-fought actions, during which the situation was often critical, and this was gained rather by the individual courage of the soldier and the superiority of his arms than by the conditions under which he fought.

Bugeaud's clear perception and military instincts enabled him, from the first, to grasp the situation in its entirety; his firmness and energy allowed him to carry out his views with success. While waiting, with what patience he could muster, until the Government should recognise the necessity of giving him the force required to effect the complete conquest of the country, he directed his attention to perfecting the organisation of the troops already under his command. He forbade absolutely the multiplication of the fortified posts with isolated garrisons, and, in spite of the greatest opposition from the officers with the army, insisted upon the marching columns being placed on a footing which would enable them to vie with the Arabs in mobility. He showed, in short, that he possessed the highest qualifications of a commander entrusted with the conduct of a European force, in an unknown country and against an uncivilised foe, by adapting his arrangements in every way to the special conditions which existed.

Cipriano.

AN EPISODE OF THE LAST CARLIST WAR.

By JOHN AUGUSTUS O'SHEA.

AZAMAT BATUK gave him to me. The gentleman with the queer name once created a sensation by writing letters to the *Pall Mall Gazette*, which ostensibly crystallised the opinions of a Turk on the eccentricities of English society. He was forestalled in the idea by one Oliver Goldsmith. I do not think he was a Turk ; I fancy he might have been a Russian, who had served in the Siege of Sebastopol ; still, when his letters were published in form of volume, the portrait of the author on the frontispiece was a playful representation of the back of a skull, surmounted with a fez. Azamat Batuk had his secret. I shall respect it.

Cipriano was a sturdy urchin of some fifteen years, a native of a village not far from Estella, the chief town of Navarre. He was too young to join the forces of Don Carlos, and regretted it much ; for at that time (and now, I incline to think) all the dwellers in the rural districts of the province were enthusiastic adherents of the cause of him they styled His Majesty King Charles the Seventh. But if the boy could not carry a rifle he could follow the fortunes of his friends somehow, and he attached himself to the service of Azamat Batuk, who was then acting as Special Correspondent for the *New York Herald*. When the pseudo-Turk had to quit the field of action, and was replaced by the late dear and able Januarius Aloysius MacGahan, I bought a horse from him, and he made me a present of a mule on condition that I would take charge of Cipriano. The boy was one of his servants, and Batuk had promised his mother that if ever he had to dispense with him he would put him in safe hands. Partly induced by the gift of the mule, and partly by the recommendation that he was faithful, a good plain cook, and a serviceable groom, I assumed the responsi-

bility. Frankly, I did not like his cooking; he was too fond of seasoning bullock-beef (the only beef to be had in Spain) with garlic, and I did not like some of his ways about horses. He had his opinions, and, when my favourite three-quarter bred Irish mare was laid up with a sore back, he would carefully remove the dressing of *aguardiente* and *manteca* (brandy and butter) which I had applied, the instant I left the stable. This he did through ignorance; but I forgave him as his ignorance was based on a mistaken notion of tenderness. He was faithful, faithful as a bulldog; and willing, very willing. Stay, I have not told what manner of lad he was yet. He was neither handsome nor ugly; he had a big, round, climate-worn face, which was deeply pock-pitted and liberally freckled, but true eyes, which could sparkle with fun or blaze with fierceness. He was undersized for his age, but strong and squarely-built; he had a rough voice, like most Spaniards of the North, was honest as a sun-dial, active, bold, and free from vice. Of course he cursed—they all curse—but these curses were merely a bad habit, and meant no more than an Irishman's "bedad" or "by the tare o' war."

At Estella he became my squire, and very proud he was as he clattered behind me on a spare horse, leading the sumpter-mule. He was as fond of exaggerating the importance of his master as a Hindoo servant, and secured me much unmerited and indeed undesired, although not undesirable, attention by asserting first that I was one of the royal bodyguard, next a captain in the squadron of Legitimacy—the *corps d'élite*—and, lastly, a foreign ambassador. Had the campaign continued I doubt not I would have ultimately become first-cousin to the King, if not a pretender to the throne myself. I took him to Tolosa at the tail of a column of the royal army, and we got on very well. We had to return rather precipitately to avoid being caught by General Moriones of the Madrid Republican army, at the head of a much larger force; and on reaching Estella I was asked by Cipriano for leave to visit his mother.

"Certainly, if he felt sure it was safe to venture in the locality in which she lived, and if he would return as soon as possible."

He was back the next day, and with him his mother, a comely, comfortably-dressed peasant matron, who brought me, as a present, an overladen basket of fresh fruit and vegetables from her own vineyard and garden, such huge bunches of luscious grapes, such splendid, smooth, bright red, giant tomatoes, and—ah! she might have spared the garlic, but her intentions were honourable.

The first duty of a battle-chronicler, as of a general, is to keep

open his communications with his base, and mine were getting woefully tangled. There was no regular postal service from the insurgent country; letters or telegrams had to be conveyed to France; and to be certain that they were safely committed to the offices, I had often to perform the arduous journey myself, riding over the hill-paths all night long, until I passed the hostile posts, crossed the frontier as an ingenuous English tourist, and caught the mail at Hendaya or St. Jean de Luz to proceed to Bayonne, the head-quarters of my telegraphic and banking arrangements.

Most of my recent letters had gone wrong, and I made up my mind, as there was no imminent prospect of fighting, as far as I could learn, to travel into France by the unfrequented pass of Vera, with which I was as familiar as with the gorges between Fleet Street and the Temple. I had to take horses with me, at least, my own—the second and the mule, if possible; but would Cipriano come? I put it to him plumply. He was nervous; he had never been to France; he had been told the French did not let Spanish boys back—they killed them or made them captives. I tried to allay his apprehensions, assured him the French were Christians, and engaged, by my own word and life, to bring him safe and sound over the borders, and to show him the sea into the bargain.

“Go with the *caballero*,” said his mother; “go in God’s name, and all will be well.”

He consented, but I now think the promise that I would show him the sea, and a half-hint that I might explain to him the mechanism of my revolver, and let him fire a few shots from it, had as much to do with prevailing on him as his mother’s advice.

The young Navarrese had heard of the sea from some rustic poet who had travelled, and was most anxious to gaze upon it. He knew it was water, a mass of water, of living moving water, larger than he had ever seen in stream or pool, or even in the river Aragon—so large that, he was told, he could not rise to the conception of it in his dreams. We moved along by the plains; thence to the hills, past the glistening salt-stretches of Salinas, up the quarry-like paths, and on, over the wooded ridges to St. Esteban and Elizondo, and the valley of the Baztan. As we rode into Vera, where the Bidassoa, which waters it, broadens a little, Cipriano asked “was that the sea?”

“No; when we come in sight of it you will not need to be told. It will make its voice heard.”

“Louder than the river rolling over the rocks?”

"Much louder and much grander; but wait."

As we topped the crest of the Pyrenees, a bare, furzy, and heathery back of exposed land, there was a water strip visible on the horizon.

"Behold!" I said; "that is the sea!"

Cipriano looked, and was disappointed.

The sun was going down, and the edge of ocean was silvered in the light.

"It shines like a knife-blade," he said.

"Aye, and cuts, too, sometimes," I added; "it is treacherous."

As we descended the mountain and got into the road leading to St. Jean de Luz, the trees kept the sea from our view; but the murmurous moan of the strenuous Biscay waters, and their swish against cliffs and lullaby on the sands, could be heard.

"Hark! what is that?" asked Cipriano.

"That is the voice of the sea."

Cipriano began to look interested. When we crossed the bridge by the lighthouse of St. Jean de Luz, which the Empress Eugénie caused to be erected, and drew up at the Fonda de la Playa, the full view came upon him, and he paused as if transfixed. His eyes dilated, his face was one expression of amazement. And yet the sea was calm. The waves came in with rounded regularity, dissolving with quietness on the beach and spreading their fan-like wash of yeasty froth and bubbles in gradually widening and gradually weakening circles. What if the boy had seen ocean at its maddest—ocean in its wrath—ocean sullen, thundering, tempestuous, with its awful noises, made up of boom of wind and shriek of wild bird; its great white-capped battalions of breakers rushing headlong upon the shore, as upon an enemy, with the weight and strength of threatening majesty, and a hoarse charging music, as of ten thousand deep fog-horns cut with the piercing energy of screaming steam-whistles!

He had seen the wished-for sea at last; and though he might not have welcomed it as those in classic story, who raised the joyous *Galathea*, or as those others who stood upon the peak in Darien, in his own way the effect was equal. He was overcome. He took one long look at it, and after we had unpacked the mule and seen to the provender and grooming of the horses, at a stable some distance from the hotel, I made my way back to enjoy a meal. The sea, from the monument to a British general killed in the Peninsular War, on a sand-hill on the right, to the rugged wall of cliff at Socoa on the left, was commanded from the windows of the *salle à manger*.

There were no sails to be seen, for this inlet of the Bay of Biscay is lonely : a bathing-place, not a haven, and boasts of but few fishing craft.

I begged the landlady, who was a Spaniard, to see that her young countryman got such food as would suit his palate, food with plenty of garlic in it. But he was not to be found. After searching in the house and in the stable, and sending messengers to and fro about the small town, Cipriano was discovered placidly seated in a recess, between a cottage and a disused barn on the shore. He was contemplating the sea. Such a fascination had the novel sight of this boundless liquid spread, in perpetual throb and stir, wrought upon him, that he forgot that he had an appetite. I had been alarmed at his non-appearance, for I had as much difficulty in persuading him, at first, that it was not absolutely necessary that he should always be at my heels, as if he were the bull-dog to which I compared him. But ocean had thrown him off his balance. Hardly had he snatched a few morsels in the kitchen, when he sallied out and began pacing the beach, apparently lost in perplexed thought, now and again casting a wistful awed look towards the far faint sky-line. An unsuspected mine had been sprung upon his soul : he was as one who tries to penetrate a mystery. As I drew away from the window, I noticed that he took up a handful of pebbles, and laid them in a heap at the point where the foam fringe began to recede.

We dined merrily that evening, some friends I had parted with a few weeks previously, and I, and were about to discuss the dessert, when the landlord in his *chef's* cap and apron slipped into the room, and made a sign to me.

"What is the matter, Joseph ? The *langoustes* are superb, worthy of the ancient *cordon* of the Duke d'Ossuna."

"Thanks, Monsieur, it is a pleasure to cook for one who knows how to appreciate the art. A moment's chat with you, pray."

Heaven forgive me for the pious fraud, but Joseph took a pride in his calling, and a little praise gave him such pleasure that I could not resist the temptation of pretending to be a connoisseur in cookery. But if I prefer a plain chop to roast pheasant *à la Sainte Alliance* ; still I do not like to be disturbed at my meals, and expressed myself rather vehemently to that effect, in the Iberian way, when Joseph said my servant wanted to see me.

"He almost pushed in," continued Joseph, "when he came first, as Monsieur was at the soup, and I told him Monsieur could not be disturbed."

"Say I shall see him in a quarter of an hour. Let him wait."

The coffee was brought, and we tipped our cigars with fire. I had forgotten all about Cipriano, when a scuffle outside the door drew my attention.

Joseph entered, looking flushed :

"I wish you would come out, Monsieur; that boy again, said he wanted to see you. I asked him to give me his message, he refused; said he wanted to see you privately, it was on a matter of life and death; and when I shook my head at him he drew his *navaja*, and it gave me as much as I could do to disarm him."

I ran out, wrathful with my domestic. He was at the door fuming with rage; but the moment he saw me he grew tranquil and beamed into a smile.

"Come, Señor, come with me," he cried.

"What is it?" I exclaimed; "why so unruly? Have your senses left you?"

"There is not a minute to be lost. I will tell you when we are outside."

Joseph and a few idlers at the hotel door were about to follow when I told them it was all right, and requested one of them to bring me my hat.

As soon as I was covered, Cipriano caught me by the hand and hurried me in the dusk down to the stable. I began thinking some misfortune had occurred to my stud. No, there were the two horses ready saddled and bridled, and the mule with his pack-panniers strapped on!

I turned a gaze of angry inquiry upon the boy.

"Mount, Señor," he cried excitedly; "we shall be away in the hills in half-an-hour, and leave those French devils and that accursed inn-keeper who took my *navaja* to drown like rats."

"How? What is wrong?"

"The sea, the sea!" he said; "'tis coming in upon the land. I swear it is so. It has been so for hours. I did not credit my eyes at first, but I set stones upon the beach and watched them, and in it came, ever on, little by little——"

"Nonsense, Cipriano; you speak the words of a *loco*. You are mad."

"*Señor mio, amo, Don Juan*," cried the boy, clasping his hands in pleading attitude; "by the body of the Virgin, I am not mad; I speak truth."

"But hearken——"

"There is no time, if we'd save ourselves. I saw the sea——ah! it is treacherous——sweeping over the stones, and coming past

them to that big post, and now it is up to the high pathway, and soon it will be bursting over the house-tops."

"Unsaddle," I said, quietly.

Cipriano shrugged his shoulders, muttered something about those who acted like madmen while they thought others spoke like madmen, lit a cigarette, and squatted upon a balk of timber by the stable-door.

"Unsaddle," I requested.

He shook his head in emphatic negative. "No, you may alter your mind. If not, I stop to die with you;" and he puffed away like the precious rustic stoic that he was while he awaited the engulfing waters.

My faithful Cipriano was unacquainted with the vulgar phenomenon of the rise of the tide; still he felt that his duty to his master was to perish by his side. Spain may not be scientific, but it is chivalric.

The Royal Navy.

FROM THE ACCESSION OF H.M. THE QUEEN.

By ROBERT O'BYRNE, Barrister-at-Law, F.R.G.S.

PERHAPS no Department of the public service has gone through a more complete metamorphosis during the eventful reign of our Gracious Sovereign than the Royal Navy. Whether we examine the changes introduced in the Board of Admiralty itself; the professional position and prospects of officers and men; the thorough remodelling of ships and guns; and, though last not least, the services rendered by the Royal Navy to the nation and to the cause of science—we can arrive but at one conclusion, that it will be at least interesting if a panoramic view be taken of these important changes.

To properly organise this review, it is proposed to divide the subject into four chapters: 1st, The Board of Admiralty; 2ndly, The officers and men; 3rdly, The ships and guns; 4thly, The achievements of the navy.

CHAPTER I.—THE BOARD OF ADMIRALTY.

The system which existed from the year 1837 until the year 1869, in the organisation of the Admiralty Board, may be shortly described as follows:—

There was a Board consisting of six Lords—

The First Lord of the Admiralty.

Four Naval Lords.

A Civil Lord.

There were also two Secretaries—

The first a Parliamentary Secretary.

The second a Permanent Secretary.

The authority of the First Lord was, according to long-established usage, paramount and supreme. He had the general direction and supervision of the departments; with the responsibility inseparable from such a position. The other five Lords had the superintendence of the several branches of business into which the departments of the Admiralty were divided. The duties of each Lord were assigned to him by the First Lord, after consultation with his colleagues, and fixed by a Minute of the Board.

The First Naval Lord occupied a position of more importance than the other four Lords. He was the confidential adviser of the First Lord of the Admiralty in all matters requiring professional advice.

The Board met sometimes daily, and at all times frequently, in every week, when all important business was brought before it for discussion and consideration by the several Lords, amongst whom the whole business of the Admiralty was distributed.

The First or Parliamentary Secretary attended the meetings of the Board, and noted on every paper read at the Board the decision arrived at. He was therefore necessarily conversant with the daily business of the Admiralty, and, having heard every measure of importance discussed, was enabled afterwards to state the reasons for its adoption.

The Permanent Secretary had a general superintendence over the office: he attended early in the morning to open the letters addressed to the Admiralty; these he distributed to the proper branches; and, having worked the whole day, he was detained until all the letters were despatched in the evening. His services under different Administrations, and his familiarity with the details of official transactions, rendered him most useful to each successive First Lord of the Admiralty.

The Civil Departments of the Naval Service were also placed under five permanent officers, who were called principal officers in the patents constituting the Board of Admiralty:—

The Controller or Surveyor of the Navy.

The Accountant-General of the Navy.

The Storekeeper-General.

The Controller of Victualling.

The Director-General of the Medical Department.

These departments were placed under a superintending Lord, who was the channel of communication between them and the Board of Admiralty.

The above sketch of the former system will suffice to explain the modes of conducting the business of the Admiralty previous to 1869. By an Order in Council of 14th January 1869, the then system was altered with the view of simplifying and facilitating the transaction of business.

The position of the First Lord of the Admiralty remained as before.

The First Naval Lord was declared to be responsible to the First Lord of the Admiralty for the administration of so much of the business as relates to the *personnel* of the navy, and for the movement and condition of the fleet,

The Junior Naval Lord was to assist the First Naval Lord in this division of the business.

The Controller of the Navy, instead of being a principal officer, was made a member of the Board as Third Lord. He was to be responsible to the First Lord of the Admiralty for the administration of so much of the business as relates to the *matériel* of the navy, to the building and repairing of ships, to guns, and to naval stores.

The Fourth Naval Lord was to be dispensed with.

The Parliamentary Secretary no longer performed the duties formerly assigned to this office, but was to be responsible to the First Lord of the Admiralty for the finance of the Department.

The Civil Lord was to act as Assistant to the Secretary.

The Permanent Secretary was charged with the exclusive management of the Secretariat, under the directions of the First Lord of the Admiralty. His position was necessarily modified by the new system of transacting the business of the Department. He was no longer acquainted with the daily current of affairs, and, consequently, whenever a First Lord was newly appointed, there was no officer of the Department conversant with the whole course of official business to whom the First Lord could apply for information.

This alteration in the Board of Admiralty was followed by a remodelling of the Civil Departments :—

Three out of the five principal officers were dispensed with.

The Controller of the Navy ceased to be a principal officer.

The Storekeeper-General and the Controller of Victualling were abolished.

The duties of the Accountant-General and of the Director-General of the Medical Department were also modified.

With these facts before them, the Select Committee appointed to inquire, in 1871, into the then state of the Board of Admiralty met with a serious difficulty in their endeavours to form an impartial opinion of the practical effect resulting from these extensive changes. Mr. Childers, who, as First Lord of the Admiralty, organised the new system, was prevented by serious illness from appearing before the Committee. His knowledge of details, and especially of the work of the Civil Departments of the Admiralty, both before and after the change, would have assisted the Committee in their inquiries, and enabled them to cite his own reasons in justification of his measures.

Under the new system of Admiralty Administration, this absence of the First Lord was more than usually inconvenient;

because he had become the centre round which the whole system revolved. He alone heard from his subordinates the current business in which they were employed; and although the other Lords were severally acquainted with their own special duties, they had no longer the opportunity of knowing the progress of matters in other branches of the Admiralty, a consequence which will be explained more clearly hereafter.

With the view of ascertaining the practical working of the new system, the Committee examined Admiral Sir Sydney Dacres in reference to his duties in connection with the *personnel* of the navy, and Sir Spencer Robinson in regard to the *matériel* of the navy.

Sir Sydney Dacres having been a member of former Boards of Admiralty, and holding in 1871, the date of the inquiry under discussion, the official position of First Naval Lord, was able to give information upon both systems of Admiralty administration. He unreservedly stated his opinion to be that, under the then existing system the naval element was not sufficiently represented at the Board of Admiralty. He himself was deeply impressed with this defect, feeling his own responsibility to be too great for one officer, whoever he may be, and believing that this was the general opinion of the navy.

Sir S. Dacres complained that he had no colleague of sufficient rank in the navy whom he could consult on difficult points. Sir Spencer Robinson was not only fully occupied with the affairs of an onerous department, but was also, by the Order in Council, restricted to special duties. Another officer, Captain Willea, had been, indeed, appointed to a new office constituted for the purpose of assisting Sir S. Dacres, but this captain, although an able and experienced officer, had not the responsibility which would attach to a naval member of the Board of Admiralty on professional matters.

Lord John Hay again, at this time the Junior Naval Lord, was by the Order in Council put in a subordinate condition.

In confirmation of his opinion that additional naval members were required at the Board of Admiralty, Sir S. Dacres stated that on the day the Russian Note arrived, Mr. Childers said: "Recollect that the first thing which must be done is to put another Naval Lord into the Admiralty. Admiral Dacres also said that at even the then present time, if he were to be temporarily absent, from illness or accident, there was no Lord of the Admiralty who could undertake the duties of his department.

If such assistance might be required in peace, it is obvious that in any emergency where the services of the navy might be called for, serious inconvenience might arise from the want of another

officer of high position at the Admiralty. This want would be then ill remedied by a new appointment, because an officer suddenly called upon to perform duties, with the details of which he was previously unacquainted, must work at a disadvantage.

Captain Willes, who had been appointed to a new office called "Chief of the Staff," assisted the First Naval Lord in many of his duties. Captain Willes received the pay of a Lord of the Admiralty, excepting the allowance in lieu of a house. His duties were almost exactly those of an additional Naval Lord. It does not, therefore, appear clearly what was the motive for creating this new office, and, at the same time, abolishing one Naval Lord. If Captain Willes had been a member of the Board, he would have been better able to assist during the temporary absence of another Lord, as well as in the general conduct of business. The evidence of Captain Willes, given before this Committee, affords some insight into the practical working of the new system.

Under the existing plan, on many matters the First Lord of the Admiralty consulted only one man, the First Naval Lord. It seemed, indeed, under a strict interpretation of the Order in Council, that there was no other member of the Board whom he could properly consult. Captain Willes, it appears, believed that this arrangement was purposely designed with the view of forcing responsibility on the First Naval Lord.

The examination of Sir Spencer Robinson as to his position under the new system, was then gone into by the Committee. Vice-Admiral Sir Spencer Robinson having held the office of Controller of the Navy from the year 1861, was appointed, in January 1869, Third Lord of the Admiralty, retaining his office as Controller of the Navy. The combination of the two offices of a Lord of the Admiralty and Controller of the Navy placed him, as it appears, in an anomalous position, since he was at once a member of the Board of Admiralty, and also serving under the Board of Admiralty.

The result of this arrangement appears not to have been altogether successful. On this subject it is again to be regretted that the evidence of Mr. Childers could not be obtained, as he might have stated how far he was satisfied with his own remodelling of the Board, or to what extent his experience might have led him to contemplate some further change of the Order in Council. In the absence of this information the Committee had heard the opinions of Sir Sydney Dacres and other officers, experienced in the business of the Admiralty, that the Controller should not be a member of the Board of Admiralty.

Sir Spencer Robinson stated fully in evidence, and in a document dated 1867, the want of method and concentration under the former system. With the view of remedying this defect, he had recommended that the superintendence of naval stores, that is, of all stores required for the fitting of ships and for work in the dock-yards, should be placed under the Controller of the Navy. In addition to this change, Admiral Robinson also recommended that the Controller, while remaining to some extent a permanent official, should also be a member of the Board of Admiralty. This recommendation was followed by a letter on the accession of Mr. Childers to the Admiralty, stating that Sir S. Robinson wished to place his office at the disposal of the First Lord.

The subsequent Order in Council of January 1869 appointed Admiral Robinson to the united offices which he had himself recommended. The constitution and usage of the Board were, however, so entirely changed that affairs were more embarrassed than before, and the inconvenience to the public service was, as Admiral Robinson stated, greatly increased. Instead of the former practices, where members of the Board of Admiralty could state their opinions, and consult each other in the presence of the First Lord, there was now no opportunity for consultation or discussion at the Board; but decisions were arrived at seriously affecting the Controller's business in his absence, so that his objections were not heard.

It was obvious that Mr. Childers himself was the only person who could answer these statements. In the meanwhile it became evident that mutual confidence and friendly communications indispensable to the proper management of a great public department were here wanting. Whether members of a department met in one room or another, they could not properly conduct the public service unless they could cordially act together in the arrangement of numerous details requiring agreement and harmony of action.

Instances serve to exemplify the difficulty of fixing responsibility in a matter where several persons have been concerned in the decision.

If it was intended that the Order in Council of January 1869 should be strictly construed, its effect would render any meetings of the Board of Admiralty useless, except for the purpose of officially ratifying previous decisions. The words of the Order not only fix the distribution amongst the several Lords, but seem also designed to restrict each Lord to the special business assigned to him.

This is the construction put upon the Order by Mr. Lushington,

and, under such conditions, the meetings of the Board would be, as he says, valueless, or even detrimental, to the public service. Sir S. Dacres said that under a former Board of Admiralty, when he was Second Naval Lord, he always gave his opinions at the Board on every subject with which he believed himself to be acquainted. He thought that, under the former system, subjects were better ventilated, and that mistakes which sometimes occurred were corrected by the Board. He did not consider that the Board weakened responsibility.

Sir J. Briggs, who had had long experience of Admiralty business, told the Committee that he had often known opinions to be altered by discussion at the Board, and, although he was an advocate for individual responsibility, he thought it desirable to bring the Lords together so that each might know what the others were doing.

Almost every witness gave his opinion that the union of a seat at the Board with the office of Controller had been a mistake. Indeed, it was said that Mr. Childers had intended a reconstruction of the Board to this extent. Some witnesses suggested that there should be a Superintending Lord, under whose superintendence the Construction Department and the Dockyards should be placed, a debateable question.

The two Secretaries, Mr. Baxter and Mr. Lushington, recommended to the Committee the total abolition of the Board. Forasmuch as the Board met only eighty-three times during the whole of the year 1870, and the meetings usually lasted only a few minutes, the entire abolition of such an imperfect system would be an immaterial change.

The Committee endeavoured to ascertain whether the daily business was transacted more speedily under the new system of mere formal Boards. On this point there is some discrepancy; but Sir S. Dacres, Sir J. Briggs, and Mr. Lushington agreed in opinion that the old system of collecting the Lords in one room, where they could state their views, expedited business more rapidly than the then existing mode, which seemed to consist in circulating papers, whereupon their Lordships were expected to write their decisions.

It appears from the evidence that the most beneficial change introduced by Mr. Childers was the transference to the Admiralty at Whitehall of the Store Department of the Navy.

This arrangement is said by Sir S. Robinson to have facilitated business, and enabled work to be done better, with less straining, and at a considerably diminished cost. He stated that the consolidation of dockyard buildings, of naval stores, and of gunnery

under the Controller, added to "the efficiency of the service," as well as to economy, and that Mr. Childers deserved great credit for having brought it about. So far as the stores, technically called naval stores, are concerned, the introduction of some change had become necessary. The dockyards became large manufacturing departments, and the special knowledge possessed by experienced men of business was indispensable for the economical management of these costly establishments.

In connection with this re-arrangement a Purchase Department was established, under the superintendence of the Finance Secretary. This Department was charged with the purchase of all naval stores, victualling stores, and medical stores. It also managed the sale of old vessels, and of all obsolete and useless stores.

The money annually expended during peace in purchases amounted to nearly £2,000,000, the annual estimate for stores sold about £40,000. In the event of warlike operations the sum would be much larger, while the control and supervision would be probably less efficient.

The Committee asked some questions respecting the Victualling and Medical Departments. The supplies were said to be good in quality and sufficient in quantity, and the Secretary (Mr. Baxter) stated that in the Medical Department there had been a great saving. Whether the scheme of placing these large store departments under the charge of a subordinate officer was altogether satisfactory appeared to be a matter of doubt. A reduction of more doubtful policy appeared to have been made in the Victualling Yards, where the Captain-Superintendent and the Master-Attendant had been both abolished.

The Admirals in command at Portsmouth and Plymouth remonstrated against this reduction, while Sir Sydney Dacres was entirely opposed to the change, which he considered to be a great mistake. This measure, appears, therefore, to have been adopted against the highest professional advice.

With respect to these and similar economical changes, the Committee observed that their effect was never tested until a time of pressure occurred. It should, therefore, they observed, be the duty of the Admiralty to watch carefully any indications which might guide them in judging whether such naval superintendence could be altogether dispensed with in victualling a fleet at a moment of emergency.

Some other matters connected with the new system of management were brought incidentally under the notice of the Committee—the abolition of the official houses, and the removal

of the Naval Lords and of the Secretary from the precincts of the Admiralty. This arrangement, economical during a time of peace, might be found seriously inconvenient in the event of war, where the active services of the navy would be required.

The patent under which the Lords Commissioners of the Admiralty were appointed was brought under the notice of the Committee. By this patent the Lords were directed to nominate certain principal officers, whose titles are enumerated. The Solicitor of the Admiralty considered the patent on this point to be mandatory. It had, however, been set aside.

A reference to older patents showed that changes had occasionally been made in this instrument, and if a revision of the patent were contemplated, it might be possible to guard the powers conferred on the Admiralty by ancient usage and prescription, without recapitulating possessions which did not belong to the Crown, and *droits* which had been long extinguished.

The Committee reported that they had failed to discover the advantage of fixing the precise duties of the several Lords of the Admiralty by an Order in Council. A Minute of the Board and, where necessary, the assent of the Treasury, would facilitate some re-adjustment of the business according to the special qualifications of the different Lords, or the ever-varying demands of the public service.

In concluding their Report, the Committee felt it to be due to Mr. Childers to acknowledge the advantages which were admitted to have resulted from the consolidation and concentration of offices at the Admiralty. Any person conversant with the daily duties of a great public department would be aware of the labour and tedious attention to details requisite for effecting such changes. The alterations which had been made for the purpose of facilitating the transaction of business in the subordinate departments, are stated to have contributed both to efficiency and economy. The witnesses were, however, unanimous in their opinion that the then present constitution of the Board of Admiralty was not satisfactory.

The Order in Council of January 1869 had so far disabled the Board that it was no longer fitted for consultation or for the review of naval affairs. That Order in Council did not alter the responsibility of the First Lord of the Admiralty; and, under any circumstances, his supremacy and consequent responsibility must be maintained. A civilian at the head of the Admiralty must, however, have assistance and advice from naval men. While, therefore, under Parliamentary government, the civil authority is supreme,

some arrangement should be made to give the First Lord professional knowledge upon innumerable matters which he may be called upon suddenly to decide. The Board of Admiralty was constituted to bring around him men of high standing and of long experience in the navy.

The ancient patent of the Admiralty, qualified by long usage, had established an equality of the Lords for the purpose of suggestion and consultation, combined with the absolute supremacy of the First Lord for the purpose of action. If this system was to be abolished, some arrangement should be substituted in order to furnish the information which the Board meetings heretofore supplied.

The maintenance of the navy in a state of continued preparation and efficiency depends upon innumerable details, which neither the examination of the Estimates nor even the vigilance of Parliament can secure. If these details should be forgotten or mismanaged, the day of trial, whenever it might come, would be a day of national disaster. The First Lord of the Admiralty can only be acquainted with such matters through daily intercourse and friendly communication with officers of the navy. It is therefore of primary importance that the naval service should be adequately represented in the department which regulates naval affairs.

Further than this the Committee did not consider it necessary to pursue this subject. The responsibility of administering the affairs of the navy must rest on Her Majesty's Ministers. They must decide upon the system under which the Admiralty should in future be conducted; and it was hoped that the information obtained by the Committee would afford some assistance towards a right decision on a question connected with the maritime power of the realm.

Following this Report, made in 1871, an Order in Council was issued on the 19th of March in the following year, thus regulating the Board of Admiralty as it now stands:—

The First Lord of the Admiralty.
The First Naval Lord.
The Second Naval Lord.
The Junior Naval Lord.
The Civil Lord.

By this Order three Secretaries were established:—

The Parliamentary Secretary.
The Permanent Secretary.
The Naval Secretary.

It was determined that the office of Controller of the Navy should be re-established as an office to be held for a fixed period by an officer *not* a member of the Board, and that the Controller be assisted by a permanent officer, to be called Deputy Controller and Director of Dockyards, whose duties should be mainly concentrated on the management of the dockyards.

While the First Lord of the Admiralty is held responsible for all the business of the Admiralty, the business itself should be transacted in three principal divisions :—

(a) The First Naval Lord, the Second Naval Lord, and the Junior Naval Lord to be responsible to the First Lord of the Admiralty for the administration of so much of the business relating to the *personnel* of the navy, and to the movement and condition of the fleet, as shall be assigned to them, or each of them, from time to time by the First Lord.

(b) The Controller to be responsible to the First Lord for the administration of so much of the business as relates to the *matériel* of the navy, the Controller to have the right to attend the Board, and to explain his views, whenever the First Lord shall submit to the Board for their opinion designs for ships or any other matters emanating from the Controller's Department.

(c) The Parliamentary Secretary to be responsible to the First Lord for the finance of the Department, and for so much of the other business of the Admiralty as may be assigned to him.

(d) The Civil Lord, the Permanent Secretary, and the Naval Secretary to have such duties as shall be assigned to them by the First Lord.

The Second Naval Lord receives a salary of £1,200 a year; and the Naval Secretary £1,500 a year, together with a house, or £200 a year in lieu thereof.

The following Return shows the changes in the Board of Admiralty from the accession of the Queen in 1837 to the present date :—

1837–1841. First Lord of the Admiralty, the Right Hon. Gilbert, Earl of Minto.

Rear-Adm. Sir Charles Adam, K.C.B.

„ Sir William Parker, K.C.B.

Capt. the Hon. George Elliot, C.B.

„ Sir G. S. Froubridge, Bt.

The Right Hon. Archibald, Lord Dalmeny.

1837. Capt. M. F. F. Berkeley, *v.* Elliot.

1838. Capt. Sir S. J. B. Peehell, Bt., K.C.B., *v.* Berkeley.

- 1841-1846. First Lord of the Admiralty, the Right Hon. Thomas,
Earl of Haddington.
Admiral the Right Hon. Sir George Cockburn,
G.C.B.
Vice-Adm. Sir William Hall Gage, G.C.B.
Rear-Adm. Sir G. F. Seymour, Kt., K.C.B.
Capt. the Hon. William Gordon.
The Right Hon. H. T. L. Corry.
1844. Rear-Adm. William Bowles, *v.* Seymour.
1845. The Hon. Henry Fitzroy, *v.* Corry.
- 1846-1852. First Lord of the Admiralty, the Right Hon. George,
Earl of Auckland, K.C.B.
Vice-Adm. Sir Charles Adam, K.C.B.
Rear-Adm. J. W. D. Dundas.
Capt. M. F. F. Berkeley.
„ Rt. Hon. Lord John Hay.
Hon. William Cowper, M.P.
1847. Capt. Alexander Milne, *v.* Adam.
1849. Sir F. T. Baring, Bt., M.P., *v.* Auckland.
1851. Rear-Adm. Houston-Stewart, *v.* Hay.
- 1852-1852. First Lord of the Admiralty, the Right Hon. Sir
James Robert Graham, Bt., M.P.
Vice-Adm. Hyde Parker.
Rear-Adm. M. F. F. Berkeley, M.P.
„ The Hon. R. S. Dundas.
Capt. Alexander Milne.
- 1852-1855. First Lord of the Admiralty, Rear-Adm. His Grace
Algernon, Duke of Northumberland.
Vice-Adm. Hyde Parker.
Rear-Adm. Sir Phipps Hornby, K.C.B.
„ Sir Thomas Herbert, K.C.B., M.P.
Capt. the Hon. Arthur Duncombe, M.P.
„ Alexander Milne.
1854. The Right Hon. Sir J. R. Graham, Bt., *v.* Nor-
thumberland.
Rear-Adm. the Hon. F. F. Berkeley, M.P., *v.*
Parker.
Rear-Adm. the Hon. R. S. Dundas, *v.* Hornby.
- 1855-1858. First Lord of the Admiralty, the Right Hon. Sir
Charles Wood, Bt., M.P.
Rear-Adm. Sir M. F. F. Berkeley, K.C.B., M.P.
„ Henry Eden.
„ Peter Richards.

- 1855–1858. Capt. Alexander Milne.
Sir Robert Peel, Bt., M.P.
1857. Rear-Adm. the Hon. Sir R. S. Dundas, K.C.B., *v.*
Berkeley.
- 1858–1859. First Lord of the Admiralty, the Right Hon. Sir
John Pakington, Bt., M.P.
Vice-Adm. William Fanshawe Martin.
„ The Hon. Sir R. S. Dundas, K.C.B.
Rear-Adm. Sir Alexander Milne, K.C.B.
Capt. the Hon. Swynfer Thos. Carnegie, C.B.
The Hon. Frederick Lyon, M.P.
- 1859–1865. First Lord of the Admiralty, His Grace the Duke
of Somerset.
Vice-Adm. the Hon. Sir R. S. Dundas, K.C.B.
Rear-Adm. the Hon. Frederick Thomas Pelham.
Capt. (afterwards Rear-Adm.) Charles Eden.
„ Charles Frederick.
Samuel Whitbread, Esq., M.P.
1861. Vice-Adm. the Hon. James Drummond, *v.* Pelham.
1863. James Stansfeld, Esq., M.P., *v.* Whitbread.
1864. H. C. E. Childers, Esq., M.P., *v.* Stansfeld.
1865. Rear-Adm. E. G. Fanshawe, *v.* Frederick.
- 1866–1868. First Lord of the Admiralty, the Right Hon. Sir
J. T. Pakington, Bt., G.C.B., M.P.
Vice-Adm. Sir Alexander Milne, K.C.B.
„ Sir Sydney Colpoys Dacres, K.C.B.
Rear-Adm. George Henry Seymour, C.B., M.P.
„ Sir J. C. D. Hay, Bt., M.P.
Charles Du Cane, Esq., M.P.
1867. The Right Hon. H. T. L. Corry, M.P., *v.* Pakington.
- 1868–1874. First Lord of the Admiralty, the Right Hon.
H. C. E. Childers, M.P.
Vice-Adm. Sir Sydney Colpoys Dacres, K.C.B.
„ Sir Robert Spencer Robinson.
Capt. Lord John Hay, C.B., M.P.
Capt. Robert Hall, C.B.
George O. Trevelyan, Esq., M.P.
1870. The Earl of Camperdown, *v.* Trevelyan.
1871. The Right Hon. G. J. Goschen, *v.* Childers.
1872. Adm. Sir Alexander Milne, G.C.B., *v.* Dacres.
1872. Rear-Adm. F. B. P. Seymour, C.B., *v.* Hall.
- 1874–1880. First Lord of the Admiralty, the Right Hon.
George Ward Hunt, M.P.

- 1874–1880. Adm. Sir Alexander Milne, G.C.B.
 Rear-Adm. Geoffrey T. P. Hornby.
 Capt. the Right Hon. Lord Gilford.
 Sir Lopes Massey Lopes, Bart., M.P.
1876. Adm. Sir Hastings R. Yelverton, G.C.B., *v.* Milne.
1877. The Right Hon. W. H. Smith, M.P., *v.* Hunt.
 Adm. G. G. Wellesley, C.B., *v.* Hornby.
 Rear-Adm. Arthur W. A. Hood, C.B., *v.* Gilford.
1879. Adm. Sir Astley Cooper Key, K.C.B., *v.* Wellesley.
 Rear-Adm. Sir J. E. Commerell, K.C.B., V.O., *v.* Hood.
- 1880–1885. First Lord of the Admiralty, the Right Hon. the Earl of Northbrook, G.C.S.I.
 Adm. Sir Astley Cooper Key, K.C.B.
 Vice-Adm. the Right Hon. Lord John Hay, C.B.
 Rear-Adm. Anthony H. Hoskins, C.B.
 Thomas (afterwards Sir Thomas) Brassey, M.P.
1882. Rear-Adm. Thomas Brandreth, *v.* Hoskins.
 Rear-Adm. Sir F. W. Richards, K.C.B., *v.* Key.
 George Wightwick Rendel, Esq., *v.* Brassey.
1883. Adm. the Hon. Lord Alcester, G.C.B., *v.* Hay.
1884. W. S. Caine, Esq., M.P., *v.* Rendel.
- 1885–1886. First Lord of the Admiralty, the Right Hon. Lord G. F. Hamilton, M.P.
 Vice-Adm. A. W. A. Hood, C.B.
 „ Sir A. H. Hoskins, K.C.B.
 „ William Graham, C.B.
 Capt. William Codrington, C.B.
 Ellis Ashmead Bartlett, Esq., M.P.
1886. First Lord of the Admiralty, the Right Hon. the Marquis of Ripon, K.G., G.C.S.I., C.I.E.
 Adm. the Lord John Hay, K.C.B.
 Vice-Adm. Sir A. H. Hoskins, K.C.B.
 „ William Graham.
 Rear-Adm. James Elphinstone Erskine.
 Robert William Duff, Esq., M.P.

The following is a Return of the Secretariat of the Admiralty corresponding with the previous Return :—

1887. First Secretary, Charles Wood, Esq.
 Second Secretary, Sir John Barrow, Bt.
1889. First Secretary, Richard More O'Ferral, M.P., *v.* Wood.
1841. „ John Parker, Esq., M.P., *v.* O'Ferral.
1841. „ Hon. Sidney Herbert, M.P., *v.* Parker.

1845. First Secretary, the Right Hon. H. T. Lowry Corry, M.P.,
v. Herbert.
1845. Second Secretary, Capt. W. A. B. Hamilton, R.N., v.
Barrow.
1846. First Secretary, Henry George Ward, Esq., M.P., v. Corry.
1849. „ John Parker, Esq., M.P., v. Ward.
1853. „ Ralph Osborne, Esq., M.P., v. Parker.
1854. „ Augustus Stafford, Esq., M.P., v. Osborne.
1855. „ Ralph Osborne, Esq., M.P., v. Stafford.
1855. Second Secretary, Thomas Phinn, Esq., v. Hamilton.
1858. First Secretary, the Right Hon. H. T. Lowry Corry, M.P.,
v. Osborne.
1858. Second Secretary, William G. Romaine, Esq., C.B., v.
Hamilton.
1859. First Secretary, Rear-Adm. the Right Hon. Lord Clarence
E. Paget, C.B., M.P., v. Corry.
1866. „ the Right Hon. Lord Henry Lennox,
M.P., v. Paget.
1869. „ William E. Baxter, Esq., M.P., v. Lennox.
1869. Second Secretary, Vernon Lushington, Esq., Q.C., v.
Romaine.
1871. First Secretary, G. J. Shaw-Lefevre, Esq., M.P., v. Baxter.
1872. Naval Secretary, Capt. (afterwards Rear-Adm.) Robert
Hall, C.B. (First Naval Secretary), v. Lushington.
1874. First Secretary, the Hon. Algernon Fulke Egerton, M.P.,
v. Shaw-Lefevre.
1880. „ G. Otto Trevelyan, Esq., M.P., v. Egerton.
1882. „ Henry Campbell-Bannerman, Esq., M.P.,
v. Trevelyan.
1882. Permanent Secretary, Capt. George Tryon, R.N., C.B.,
v. Hall.
1884. First Secretary, Sir Thomas Brassey, K.C.B., M.P., v.
Campbell-Bannerman.
1884. Permanent Secretary, Evan Macgregor, Esq., C.B., v.
Tryon.
1885. First Secretary, Charles Thomas Ritchie, Esq., M.P., v.
Brassey.
1886. „ (Parliamentary and Financial) the Right
Hon. J. T. Hibbert, M.P., v. Ritchie.
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Hints for the Next Afghan Campaign.

By H. C. M.

I HAD the honour to be called upon some time since to report on "carriage and expenditure of ammunition" for the Indian army, and in so doing, "to combine a history of the past with information likely to prove useful in the future." I submitted, therefore, the following short treatise; and while confessing that some of the opinions therein expressed have been obtained rather from theoretical than practical knowledge of the subject, I may say that I have also had enough experience in the field to confirm me in my views regarding the best mode of carrying ammunition in what I have designated the "first or fighting line."

Carriage of Ammunition.

In treating of carriage, the following points have to be considered:—

- 1st. The rapidity with which it can move.
- 2nd. Its lightness, strength, and general utility.
- 3rd. Its cost.

I find that I must take these three points together as it is not easy to separate them, and I will begin by stating that in my opinion the carriage of ammunition should be formed into three divisions, which may be called:—

- The first, or fighting line.
- The second, or main body.
- The third, or reserve.

First, or Fighting Line.

This should always consist of mules, and these mules should be in regimental charge, if possible, permanently. If not permanently, let them so be at least during some months of each year; say during the cold season, when the greater number of parades are

held, that the mules may become accustomed to the men, to their dress, the gleam of arms, and firing. A certain number of men of the regiment should be told off in turn to look after the mules, and thoroughly to learn the mode of cleaning, feeding, and loading them. The animals should be regularly exercised on parade by their soldier drivers, to fit them for all that would be required of them on active service. They should be led singly, and this is an important point. They are generally led in a string, the evil of which practice the following incident will sufficiently illustrate. It also serves to show how that no detail is too trifling to be well considered in a system of organisation, since the minutest error may decide the issue of a battle. It was during the last Afghan war that I was in command of a party moving through the Khojak Pass from the direction of Chaman. Fire was opened by the enemy from both sides, which was of course returned. The string of mules upon this became uneasy and refused to be led. They circled round each other till they became literally tied in a knot, inextricably entangled. A sepoy promptly went to the assistance of the driver, but was unable to approach the animals, who shied away in terror of the strange uniform, and of the horrible gleaming instrument which he carried in his hand, and which, in their mulish minds, was associated with an alarming and startling noise.

Had the ammunition been required, we could only have obtained it by a sudden rush at the terrified animals, pitching the boxes over their backs, and thereby causing, in all probability, not only the destruction of the boxes, but injury to men and mules. This incident will, I trust, prove that I have attached no undue importance to the advisability that each mule should have a soldier driver, and be thoroughly accustomed to parade and firing.

As to the actual mode of carriage. At present ammunition is packed in boxes with screw lids, having a tin lining soldered down. It will take an armourer five minutes to open one of these boxes, and when open the orifice is so small and the ammunition so tightly packed and jammed within, that the greatest difficulty is experienced in getting it out, and much delay is unavoidable. Moreover it is absolutely necessary that a non-commissioned officer be present during the operation, for these officers only are possessed of the screw-drivers by means of which the boxes are opened.

In my opinion ammunition ought to be carried in solid leather ammunition-boxes, after the pattern of those used in the mountain batteries. Similar saddles should also be used, to which the boxes

are fastened, for these saddles never hurt the mules, and can be instantaneously unhooked.

These leather boxes can be opened by anyone in a minute, and, should the mule be killed or disabled, one man can easily carry the box on his head to wherever it is wanted. Each box should contain 1,000 rounds of ammunition.

It is laid down in the regulations that ten rounds of ammunition shall be carried in the valise or great-coat. I have reason to believe that this is a mistake, for I have always noticed that the first thing the men do on going into action is to throw off their valise or great-coat. Therewith goes the ten rounds of ammunition. The truth is that in India men cannot fight, climb, pursue, or even march really well, encumbered by great-coat or valise. In the last campaign every man had to carry seventy rounds on his person. It was too much, and more than one man—unless under exceptional circumstances—would be called upon to expend before he was relieved or had fresh ammunition sent to him. An undue amount of ammunition but serves to encourage rapid and careless firing. Fifty rounds per man I consider ample, and, perhaps, more than enough; twenty to be carried in pouch on the waist-belt behind as a kind of reserve, and thirty in the ball-bag slung in front and ready for use.

Fifty rounds, therefore, I would have carried by each man in first or fighting line, and a supply of 100 per man carried in second line or main body, and 200 per man with third line or reserve. This makes a total of 350 rounds per man, which should be enough for anything.

Second Line, or Main Body.

Regarding the carriage for the above-mentioned 100 rounds per man to be carried in this line, it must be by means of ponies or mules. These can be hired or bought when required, and may here be led in a string of three, by ordinary drivers. Unlike the trained animals of the first line these latter are not intended to be under fire. Let the boxes and saddles be similar in size and make to the ones suggested for the fighting line. A number of these should be always in readiness.

The ordinary pack-saddle never fits the animal, and when he gets out of condition it is apt to give him a sore back. On the contrary, the pattern I recommend combines comfort to the animal with easy access to the ammunition-boxes, which can quickly be unhooked at pleasure. The saddle can also be readily unstrapped, and the animal, relieved of his burden, can graze and drink, and

enjoy that rest without which sustained exertion is impossible to man or beast.

The object of having this line of ammunition on mules or ponies is self-evident. While absolutely necessary that it should be within their power to push on as fast as the first line, the importance of keeping them out of fire must not be forgotten, for these animals are comparatively untrained, and, if brought under fire, a stampede of beasts and drivers would undoubtedly ensue.

The question may now arise, "How is the first line to be replenished?" In this way. As their ammunition-boxes become empty, let them return to the second line, unhook their empty boxes and take up fresh ones. Here, also, the small two-wheeled double-handled light cart (as used in commissariat yards for moving heavy grain-bags to and fro) might come into play. They are easily drawn by one man, though naturally two manage better, when one drags and the other pushes and guides. On each of these two ammunition-boxes could, with ease, be carried to the fighting line by men from the second line. Moreover, on the line of march they would be no impediment, as they could be drawn by some of the many dhooly-bearers attached to each regiment, and could be utilised for the carriage of kit.

Third Line, or Reserve.

Two hundred rounds per man in this line; and here carts and bullocks may be brought into use. The carts, however, I would have built for this purpose, modelled on the Maltese pattern, without superstructure of any kind. The wheels, also, must be high to lighten the draught and obviate the danger of sticking fast in deep ruts. These carts, with a good pair of bullocks, such as in former days every commissariat yard could boast of, could go almost anywhere. At least every other cart should be driven by ordnance lascars, who, since they must, in any case, accompany a column, might just as well be utilised as drivers. This arrangement would not only have the advantage of lessening the number of followers, but would materially increase the strength of the ammunition guard, since the lascars have side-arms.

In this line the present style of ammunition-boxes could be used, as they would only have to be opened on the halt, and they are certainly valuable for preserving the ammunition. Ten of these could be carried on one cart, in addition to which two picks, two spades, and two bill-hooks should be strapped on or under each cart, to be used when a bad piece of road is arrived at. Each box will fit into a socket, while a leather strap and buckle

passed over them will keep them firmly in position, whatever happens.

Finally, tarpaulins made to fit the carts and cover the ammunition, with rings on one side and hooks on the other for lashing down, will defy all weathers. And this completes a system of ammunition carriage which has been suggested to me by practical experience.

The Cost.

This is a vexed question, but we must remember that ammunition must be carried, cost what it will. Therefore all thought of expense should be put aside for after consideration. That the carriage of ammunition be effected in the best and most serviceable form is of the first importance; moreover, that which is most serviceable is undeniably the cheapest in the long run.

I have laid it down as a rule that carriage for the first or fighting line be composed of mules, for the reason that they can carry more weight than ponies, are quieter also, and much hardier. They endure cold, privation, and hard work cheerfully, and, though they are more expensive to buy than ponies, are worth much more than the difference in outlay. Government have plenty of these animals at the end of a campaign, which might be divided and handed over, so many to each regiment, and placed under charge of the quartermaster.

The sepoy drivers would, of course, require a small allowance in addition to their regimental pay, but it would be less than would be demanded by hired drivers. As these animals died out, they might be replaced by a good class of pony (supposing mules were considered too costly), but the ponies would have to be all mares or geldings. It would undoubtedly cost something to keep always in readiness the requisite number of animals, but when I consider the enormous price which was given for mules and ponies for the last campaign, when the need was urgent and they had to be procured in haste and at any cost, it seems to me that my plan is the most economical. Furthermore, the percentage of death would be less, and the work better done.

Here I should like to urge another point which I consider very important. If one regiment be unfortunate in losing its animals, let not those of another regiment be handed over to it. Let the bereaved regiment be supplied with fresh beasts, and let each break in and train their own. The result will prove satisfactory in that greater value will be attached to the animals by each individual regiment, and more care will consequently be

taken of them. Moreover, each corps will stand upon its own merits as regards efficiency in the field. More than once during the last campaign have I known undue credit awarded to one regiment for its smartness in pushing on, baggage and all, without hitch, while I—behind the scenes—could account for their efficiency. In truth, they deserved small praise, for, provided with the well-trained carriage belonging to another regiment, it was all plain sailing. By-and-bye the latter, shorn of the trained animals upon which they had justly prided themselves, are ordered to the front. They receive for their portion all the cast-off or untrained brutes which can be hastily gathered together, and with these are expected to push on with a rapidity equalling that of their more favoured brethren. No wonder if men thus treated are disheartened, and smart under a sense of injustice.

Again, the carriage is occasionally borrowed for transport service, and more often than not is returned in a neglected and half-starved condition. Nobody's children get nobody's portion, and have to depend solely upon what they can pick up between bringing in one load and getting off with another. This practice has caused much mortality among the baggage animals. All these difficulties would be overcome by the plan of a permanent supply of efficient carriage for each corps. And here I feel myself tempted to enter into the question of transport carriage—a subject, however, too wide to cope with in this short paper. Were I to touch ever so lightly upon it, I should but strengthen my argument in favour of each regiment keeping up its own ammunition carriage in an efficient state for taking the field at any moment.

Before closing this portion of my subject I would dwell once again upon the vital importance of keeping an ample supply of saddles of the Mountain Battery pattern ready for use. It would prove more economical to have them made in time of peace than when urgently needed. The same may be said of the leather ammunition-boxes required for the first and second lines. For the third line the ordinary kind are always in store. With reference to the carts, a certain proportion should be always in hand, and these, in time of peace, could with advantage be used in camp and cantonments for general purposes, taking the place of hired carts. Seasoned wood and wheels should, however, be stored. That for the bodies of the carts, cut into required lengths and sizes, would improve by keeping, and could be quickly put together when required. Needless to say, wheels should be there ready, and, above all,

English axles. These carts invariably break down in the wheels, the cause of which is that they are not made of seasoned wood. The excessive heat shrinks the woodwork, the spokes dry in the iron naves, the tires fall off, and the cart is useless. I passed hundreds of them this last campaign, abandoned, yet complete but for the wheels, of which the ironwork alone remained, the rest having gone for firewood. This, again, proves that advantage would accrue were all carts of one size and pattern, so that parts might be interchanged in cases of breakage.

Expenditure of Ammunition.

I have no statistics by me concerning the expenditure or waste of ammunition, but I should like to offer a few suggestions thereupon.

I am of opinion that, in calculating for expenditure, three or four rounds per man should be counted as waste ammunition. I know by experience that the men waste that much before they settle down to steady shooting. The fire is doubtless directed towards the enemy, but it is apt to be, at first, without aim or range. This is quickly corrected by the officers present, who quietly suggest distances and reassure the men. Respect for, and confidence in, his British officer is the backbone of the native soldier, and as certainly as he depends upon that steadying influence in the hour of trial, so surely will not only the waste of ammunition be determined, but the very life and soul of the Indian army will hang upon the strength of its English leaders, in the mortal struggle which even now casts its shadow before; a fact which will but too surely come home in the not distant future to those who now refuse to believe that the Indian army is lamentably weak in English officers.

Meanwhile, all we can do is to give the men more chance of learning to judge distance. It has been proved to all who have had any practical experience, that the average native soldier when left to himself is helpless, but teach them at least to do justice to their leaders. Let them be more capable of obeying directions. At present they learn to fire only at fixed ranges, of which they know the exact distances. They learn, it is true, the theoretical system of judging distance, but it requires a great deal of coolness and an old hand to put this into practice in the field. They go through a course of judging-distance drill and practice; but, that once over, it is thought of no more till the following year. A native soldier has much ado to learn the difference between "line of sight" and "line of fire," and to perceive that if he fail to hold the back-sight straight, the ball will go either to right or left. He will repeat it

glibly after a time, but only constant practice will give him any idea of its real meaning. Yet on the range he may be said to get no practice. True, he fires off a certain number of rounds in a given time; but if he makes many misses, and is indolently inclined, he soon persuades himself that he will never become a marksman, and calmly abandons hope. His serenity and self-esteem are no way affected thereby.

The native army in particular require, firstly, an unmarked range, where they must judge their own distance. Then give them free use of their rifles and as much ammunition as they can legitimately fire away—on payment. Encourage matches between individuals, companies, and wings. By such means I honestly believe Government will lose nothing; and the men, as better shots, will prove a far greater gain to the State.

It will be observed that I have only referred to small-arms ammunition. Though I was requested to report perhaps in a wider sense on "*Carriage and Expenditure of Ammunition*," I have purposely refrained, for I wished to write solely upon that which practical and oftentimes hard-earned experience had given me the right to speak of with authority. The subject is worthy of an abler pen than mine, and much remains to be said; yet would I hope that my voice, feeble though it be, might serve to point a way towards remedying evils which, believe me, too heavily handicap the soldier on the weary marches of an Indian campaign.

“On Leave.”

THE opening of the Colonial and Indian Exhibition by Her Majesty on Tuesday the 4th May was in every way a great success, and her reception was a magnificent tribute of the undiminished affection of her people. The royal progress of the Queen along the route from the Great Western Railway to the Exhibition was marked by wonderful enthusiasm, and this was especially the case in going through the Park.

The reception accorded to the Prince and Princess of Wales could not fail to convince His Royal Highness how gratified the public were with the success of the opening of the Exhibition, in which he has played so prominent a part. Lord Granville was correct when he said: “I think it is right to call attention to the fact that the pivot on which it has all turned has been the exertions of His Royal Highness, and to how exactly, in this case, he has followed the example of his illustrious father, in not being merely an honorary president, but in laying down the general principles and in going into every possible detail to assure the success of the Exhibition.”

One of the most popular courts, unquestionably, is that of the West Indies; it is unlike any other in the Exhibition. It really is two courts connected by a prettily furnished salon. The Commissioner, Mr. Adderley, C.M.G., deserves great pains for the completeness of this Exhibition, and arranging it so attractively and tastefully. As you walk through the court you are struck with the brilliancy of the decorations and the neat appearance that each island-stall has. Over the entrance to each is written the name of the island, and on entering you have no difficulty in making yourself acquainted with its products.

Jamaica struck me as being one of the best arranged; I was kindly taken through it by Mr. Washington Eves, the Honorary Commissioner. The court is very tastefully decorated, and there are several very good oil-paintings of Jamaica in the olden days. All the food and other products are classified and arranged as in a museum. All the varieties of rum for which the island is celebrated are to be found here; the 1885 crop from the several estates appears to be most abundant, together with specimens of white rum, and rum ten, fifteen, twenty, and thirty-one years old. Sugar

—which is the greatest single industry of the island—liquors, coffee from the Blue Mountains, to say nothing of spices, meals, starches, dye-woods, and the celebrated Kola nuts. The salon I have spoken of has on its walls pictures of great historical interest, including one of Queen Elizabeth by Holbein, and the only portrait in existence of Columbus, kindly lent by Mr. Graves. Here is Ghidon's splendid statue of the discoverer of most of these islands, an admirable and interesting collection of old engravings, and other objects of Columbian interest, not to omit many fine portraits and paintings, mainly by West Indian artists, one of them a magnificent picture of a beach-comber, "After a Norther," by Bierstadt, valued at three thousand guineas. You should not omit seeing the sugar and timber trophies, the case of Bahama jewels and the great pink pearls, including a magnificent necklace lent by Sir R. Wallace.

Malta is a perfectly arranged court, and great credit is due to Sir Victor Houlton for the time he has devoted to it. It is entered by a very handsome stone façade, beautifully carved, and executed in Malta, under M. Gallizia, the Superintendent of Public Works, from an original design, based upon German Renaissance met with at Heidelberg, sent out to Malta and there executed, and sent back to this country in numbered blocks, so that it was re-erected here in an incredibly short time and without a flaw. We find here, in addition to the cotton stuffs, every variety of Maltese lace, the beautiful gold and silver filigree work, the stone ornaments, the picture of the Grand Master, musical instruments (a new speciality), and other attractions. In the workmanship of silver filigree the birdcage exhibited by Vincent Massa is well worth looking at. In the Albert Hall will be found many pictures by Maltese artists of great worth and interest.

Under the able management of Mr. Daniel Tallerman a Colonial Fruit-Market has been opened, thanks to the zeal and enterprise of Sir Arthur Blyth, the Agent-General for the colony, and Sir Samuel Davenport, Commissioner for South-Australia.

When the cases arrived great anxiety was felt as to the condition of the fruit after the long passage from the Antipodes; when opened, however, they were found to be of first-rate quality and flavour, and in excellent order.

The band, twenty-six strong, of the 1st Battalion West India Regiment, under the command of Lieutenant Norris and Bandmaster Quard, arrived at Portsmouth on Sunday last on board the *Tyne* troopship. The band has been engaged to perform at the Colonial and Indian Exhibition.

The *Naval and Military Record, and Royal Dockyards Gazette* promises to be a great success. It is the outcome of the *Western Morning News*, a paper which has for many years past devoted much attention to subjects connected with the army and navy and Government establishments. It is well got up, both as regards printing and paper, and is published at one penny. Its naval news is excellent, and the information about the dockyards important and valuable—because truthful. I welcome with pleasure the *Record*, and wish it the success it deserves.

The Albert Palace will, as soon as the fine weather sets fairly in, prove one of the greatest attractions of the metropolis, and especially will it be visited by hosts of Colonials and Anglo-Indians, who, at this season of the year, prefer *al fresco fêtes* to hot, stuffy theatres.

Mr. William Holland is the sole proprietor and manager. His great experience, and long and successful management of all sorts of public entertainments, has gained for this gentleman the name of "the people's caterer"; but one who has attained a popularity throughout the United Kingdom, in consequence of always bringing before the public novelties—possessing the greatest possible attraction—is entitled to the higher distinction of "the cosmopolitan discoverer of new amusements for the public." Mr. Holland recognises the faults and mistakes of our present open-air exhibitions, to wit, the Colonial and Indian, and the Crystal Palace; he has avoided the Scylla of the former as regards illiberality in the Commissariat Department, the Charybdis of the latter by allowing those people who pay their shilling at the doors to be able to see the amusements set down in the programme, free of extra charge. At the Albert Palace you get a good glass of grog for fourpence, and an excellent dinner off the joint for two shillings. This important John Bull department is under the management of those well-known and liberal caterers Messrs. Bertram and Roberts. There is a varied round of amusements always going on, and you need not be dull for ten minutes. The most important artiste to see is Katsnoschin Awata, the most marvellous juggler that has ever visited our shores. In the hands of this wonderful Japanese artiste, small objects, as balls, sticks, and fans, are made to fly into different directions—to the right, left, over and about him, thereby forming the most harmonious curves. Then what he does with an empty glass, and afterwards, when it is filled with water, must be seen—it is impossible to describe it. Suffice it to say that it appears as much under the juggler's control as the sticks, balls, and fans are. No cleverer jugglery has ever been seen in

this country, and the performances are certain to become highly popular with all classes of society. Katsnoschin Awata appears in a very handsome Japanese costume, and has an agreeable and intelligent countenance. He is assisted in his feats by his wife, a very charming-looking Australian lady.

The Alhambra Theatre of Varieties is well managed by Mr. Charles Morton, and the evening's programme should satisfy the most fastidious. Professor Wingfield and his leaping dogs is a very clever performance, and the dog who acts the part of clown kept the house in a state of merriment. There is a Ballet Divertissement, in which Mdlle. Palladino dances as gracefully as ever ; and a Grand Military Spectacle—"Le Bivouac"—in which the drills, exercises, and march past are admirably gone through, and reflect great credit on Mons. J. Hausen, by whom they were arranged. The Alhambra band is as good as ever, and the music in both ballet and spectacle is composed by Mons. G. Jacobi, who on these occasions assumes the bâton, and leads with all his well-known skill.

The mystery about the gun explosion on board the Colossus is not yet cleared up, nor likely to be. I hear, however, that Col. Hope, who predicted the occurrence, will have his gun shortly ready, and that every facility will be given him by the War Office authorities to test his system fairly and fully. I trust this may be so.

The "Old Boys" dinner of the Royal Naval School, New Cross, an institution described in this magazine some few months since, will take place at Willis's Rooms, on the "glorious 1st of June." Lieut.-General Sir R. Meade will take the chair, and I hear there is every probability of a good muster. Augustus Harris has given the Reception Committee "a lead" which it is hoped they will follow. His supper and dance to the Colonial Commissioners, their wives and daughters, at "Old Drury" was a complete success. The number of distinguished people who honoured Mr. Harris with their presence was a double compliment, attesting to his popularity in London society, and the real pleasure they felt in assisting him to give the Colonials a cordial and friendly greeting.

The St. George's Club are following suit, and will give next month a "spread" in honour of the Colonial and Indian visitors ; and I hear Sir Cunliffe-Owen has accepted the chairmanship.

General Sir Harry Prendergast, K.C.B., V.C., has returned to England from Burmah on a few weeks' leave, and no doubt will meet with a hearty and cordial reception from all classes.

"FURLOUGH."

Reviews.

LETTERS AND DESPATCHES OF NELSON. By JOHN KNOX LAUGHTON. London: Messrs. Longmans, Green, & Co.

This is, unquestionably, the book of the month, so far as the navy is concerned. Professor Laughton has made a happy and judicious selection of the best of Nelson's despatches and letters, and it will serve to correct a far too common impression, even in the navy, that he was a "dare-devil" officer, who preferred hard fighting to the careful study of the enemy. His correspondence reveals that his successes were the "result of ceaseless forethought and exact study, guided by genius of the highest order." A story is told of Suvoroff, the great Russian general, that, having amazed some foreign commanders by his plans at a council of war, one of them asked how it was that a general who was always among his soldiers, and never studying in his tent, could have acquired such conceptions of military science. "In my village," he replied, "my motto is—study like a student in time of peace, and scourge like a raging devil in time of war." Nelson held similar views; and if this book does nothing more, it will dispel a very foolish notion among young officers, that dash and bravery can atone for any remissness in study.

MOUNTAIN ASCENTS. By JOHN BARROW. London: Messrs. Sampson Low & Co.

Lieutenant-Colonel Barrow, whose *Expeditions on the Glaciers* gave him a literary reputation as a describer of mountain climbing, gives an account in this handsome and well-illustrated little work of mountain ascents in Westmoreland and Cumberland. The generality of visitors to the Lakes satisfy themselves, if they make any ascents, by going up Skiddaw, Helvellyn, and Conistone Old Man; but the author promises abundant pleasure if others, less frequented, be climbed, and we must say that the descriptions he gives of a whole series of little known mountains is sufficient to impel the laziest tourist to start off in search of them. The book is furnished with a good map, and will be largely patronised, we venture to say, by tourists during the coming holiday season.

NUMA ROUMESTAN. By ALPHONSE DAUDET. London: Messrs. Vizetelly & Co.

Mr. Henry James's verdict that this was Alphonse Daudet's "masterpiece," is evidently shared by the public, for we observe that it has passed into another edition, and promises to be one of the most successful of Vizetelly's admirable series of one-volume novels by foreign authors of repute. We know of no series of foreign novels which contains such a number and variety of fascinating books, or which might be added *en bloc* to any library without fear of finding any dull ones among them. *Prince Serge Panine*, one of the most striking of Georges Ohnet's novels, is included in this series, which has now established for itself a widespread reputation, and is exercising a powerful influence on the modern English novel.

THE THIN RED LINE. By Major ARTHUR GRIFFITHS. London: Messrs. Chapman & Hall.

BAYLERBAY. By Col. FIFE-COOKSON. Messrs. Chapman & Hall.

GOOD, BAD, AND INDIFFERENT. By Major JAMES FOX BROUGH. London: Messrs. Remington & Co.

If, at the present time, there is a poverty of professional works by military men, no one can deny that the army can turn out plenty of novels—though whether it is exactly to the credit of the army at a moment when the Empire has to face a variety of serious military problems, and whether English light literature is improved by the inrush of military novelists, are moot questions. Colonel Fife-Cookson places his story in Turkey, during the last war, and does as well as he can with the Eastern Question, although he almost confesses that it is likely to bore his readers. Major Griffiths takes us back to the Crimean War, and deals in a more artistic fashion with his materials; while Major Brough revels in the placid delights of an Indian hill station. The latter is sometimes crude, but we like the manly tone about it.

THE BRITISH NAVY IN THE PRESENT YEAR OF GRACE. By AN UNDISTINGUISHED NAVAL OFFICER. London: Messrs. Hamilton, Adams & Co.

A good breezy book, well calculated to clear away the cobwebs and expel the dust that have accumulated in the dark (although often dignified) corners of the Admiralty and Navy. He hits hard, and in his second volume he administers a second thrashing to those who roared in the press at his first castigation. We can

well imagine decorated admirals who have won their official position by methods Nelson would have scorned, describing it as "dreadfully scurrilous," but those who know anything at all about the navy will readily admit that the author has done nothing more than reproduce in his bright and graphic pages what nineteen out of twenty officers talk about and condemn, whenever the state of the navy in the present year of grace comes under review. It is unnecessary to recommend naval officers to read it, because everyone will; but our *imprimatur* may be of use to the book in its career outside the service, and we give it with our warmest wishes.

PERE GORIOU. By BALZAC. London: Messrs. Routledge & Sons.

Excellent printed and illustrated, this new cheap edition of Balzac's works deserves widespread popularity in this country. The great French novelist has hitherto escaped becoming a general favourite among English readers, owing to the dearth and scarcity of translations of his works. Now, through the enterprise of Messrs. Routledge, they are about to be placed within the reach of everybody, and the series worthily commences with *Père Goriot*, surely one of the most brilliant works penned by a novelist.

GUIDE TO OBTAINING THE HYTHE CERTIFICATE. By Captain LODWICK. Chatham: Messrs. Gale & Polden.

A guide to the Hythe course has long been wanted, and we must congratulate Captain Lodwick on having prepared one which will render essential service to those in quest of a Hythe certificate. He has a clear appreciation of the requirements of officers working up for their final examination, and the publishers have enabled him to put his work in a handy and convenient form.

TO CORRESPONDENTS.

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Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.

THE ARMY AND NAVY MAGAZINE.

JULY 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 118.)

DURING the war of 1870-71, a practice of commanding had gradually come into vogue, which proved its excellence under all circumstances, and which may be taken for a model. During the first days of the war, the great head-quarters conducted operations by short telegrams, similar to the manner in which the order was issued four years before for the march into Bohemia by a telegraph message of a few words. The work of the General Staff upon the war, however, hints that this mode was not generally of a satisfactory nature.*

Very soon, after all danger of seeing the plan of the German operations destroyed and one of the armies detached and attacked by the enemy with superior force, was past, and when more freedom of action was gained, the place of short directions, which prescribed the next steps to be taken, was taken by the so-called *direktiven*. The name that was incidentally adopted is not pretty—a German word would have sounded better, but the institution is, all the same, an excellent one. According to the work of the General of the Staff, *direktiven* are such “communications from a higher place made to a lower one, in which not so much definite orders for immediate observance are issued, as leading features. The last named serve, then, as a line to be followed in the decisions that are independently taken.” Such communications, which allow of much scope, but which secure an aggregate co-operation of

* Cf. *Der Deutsch Französische Krieg*, edited by the “Kriegsgeschichtliche” Department of the General Staff, vol. ii. pp. 154, 155.

forces, are, in these modern times, peculiarly applicable when, owing to the size of the armies, single objects are to be attained with divided forces. They are doubly practical on the service of a great head-quarters, which lies always at some distance, and can only control the army in its general operations.

In order to give an instance of how such *direktiven* are drawn up, we quote here those which the army of Prince Frederick Charles received after the battles of Orleans and Beaujency, after it had defeated the great army of the Loire, led by General d'Aurelles de Paladines, and separated it into two parts at the moment when it was prepared to march to the relief of Paris. One part of the defeated army, namely, the right wing, which had now become the 1st Army of the Loire, under General Bourbaki, had marched away to Bourg; and the other part, the 2nd Army of the Loire, under General Chanzy, after having been reinforced by fresh troops, afforded an obstinate resistance at Beaujency to the Grand Duke of Mecklenberg, who was engaged in the pursuit, until Prince Frederick Charles turned all the German forces that were on the Loire against him, and he returned westwards, behind the Loire, and, later, to the Sarthe.

The *direktiven* received during these operations, issued in the form of a letter by General Von Moltke to the chief of the general staff of the 2nd Army, General Von Stiehle, date from the 12th December, and run in their most important part as follows:—

“Seeing that in the last days of November, and the first days of this month, we have succeeded in defeating all the attempts made by the enemy in different directions to relieve Paris, it should be our first endeavour to place all the enemy's troops, which were employed for this purpose, and which are but loosely organised, *hors de combat* for a long time, by this energetic pursuit.

“This task, according to my view, must be carried out particularly in the case of that enemy's army corps that has, during the last few days, opposed the division of His Royal Highness the Grand Duke, which army corps must be again pursued with sufficient forces, and, as far as possible, dispersed.

“On the other hand we must not fail to perceive that, before the fall of Paris, our forces will not suffice to extend our operations in a south-westerly or westerly direction too far, and here, accordingly, the operations must, for the present, be restricted, which will further enable us to give the troops the necessary rest after the fatiguing movements and battles of the last few days.

“Without special reason, the line of the Cher, that is Tours,

Bourges, and Nevers, must not be passed by the 2nd Army, which should in the reserve of the main forces at Orleans find its base of operations.

"The west to be secured by the division of His Royal Highness the Grand Duke of Mecklenberg Schwerin. If, as seems to be the case, the masses of troops have been brought up from Conlie to the Army of the Loire, and have, in consequence, become included in its retreat, a central position by Chartres, at no very great distance from Paris, would afford a possibility of the breaking up the union of the armies mentioned, or the interchange of certain parts of them. The orders of the Royal *ober-kommando* with reference to the occupation of Orleans by parts of the Bavarian corps will not be affected by the foregoing scheme.

"Especial attention must, in my opinion, be paid to a permanent and careful observation of the enemy's corps (the 18th and the 15th), under the command of General Bourbaki, which have marched away by way of Giens, in the direction of Bourges and Nevers.

"In case the latter possibly re-appear, we propose the co-operation of General of Infantry Von Zastrow,* who, from to-morrow, is at Chatillon-sur-Seine, and shall be reinforced by the infantry regiments, the 60th and the 72nd. I leave it, therefore, to you to keep up communications with the above-mentioned general."

All *direktiven* are drawn up similarly to this; they declare the views and wishes of the supreme authorities of the great headquarters, and leave it to the commanders of each army corps to carry them out in the most practicable manner.

An individual commander of an army corps will much more rarely be in a position to employ such *direktiven*, as, for instance, only when one of his army corps is in a solitary position and face to face with a special mission, and it can be seen that the commanding general must take independent action without being able to communicate upon any point with the *ober-kommando*. Such may be the case when a corps shall secure the flank of the army advancing to the attack, and when it proceeds to the pursuit of defeated divisions of the enemy, and is, at times, separated by rivers or hills, &c. In these *direktiven* the necessity will often arise to prepare for various and all possible cases. In former days this was regarded as a mis-

* The commanding general of the 7th Army Corps, who marched with the greater part of his army corps through the middle of France, between the army of Prince Frederick Charles on the Loire, and the army corps of General Werder, stationed in the Saone country to secure the line of communication of the Germans with their country against interruption from the south.

take, as being productive of insecurity. It is certainly rather precarious to build the orders upon such a shifting basis; the enemy can still do something between the cases provided for, and this will most certainly create perplexity.

But war brings with it positions in which decisions must be made, and when it is impossible off-hand to decide what operations must be supposed, in the case of the enemy, as being the most probable. The orders of the great head-quarters for the attack of the 18th August that we have just quoted assumes two possible cases for the left wing of the 2nd Army, viz. the two army corps that were to be sent forwards upon Batilly; firstly, that the enemy was marching to Briey, and the other that he was posted on the heights before Metz. In each one of these something different had to be done. Still more striking is the like necessity perceivable in the case of the army of General Manteuffel, when, on the 24th January 1871, it arrived before Besançon. General Bourbaki had, after the failure of his attack upon the Lisaine position, retired along the upper Doubs, under the fortifications of that stronghold. General von Werder had followed him between the Doubs and Orignon. The latter confronted the enemy on the north, and the 2nd and 7th army corps on the south side. There was no doubt at all that the enemy could not remain at Besançon, for there was a lack of provisions to keep the army for any length of time there. General Bourbaki was bound, in the next few days, to clear out from under the protection of the forts.

But in what direction? He might, as the great road to the south was barred, attempt to break through between it and the Swiss frontier, but he might also, in order to save himself, attempt a grand *coup* towards the south-west on both sides of the Doubs. It was, moreover, not impossible that he should break through on the north-west, in order to join hands with Garibaldi in Dijon. All the more so, seeing that thus he confronted the army corps of Werder, which was, for the moment, his weakest opponent. Finally, it might be also assumed that he would lead his army to the Swiss frontier, or that he would await the attack of the Germans under the walls of Besançon.

All this was possible, but, of course, required the most various measures to be taken, and, it might be, rapid decision on the part of the generals who were primarily concerned, before the commander-in-chief could himself issue his dispositions from the head-quarters at La Barru near Dampierre. Therefore *direktiven* were issued which assumed no less than six different cases, and prescribed for the army a certain mode of operation in each one. General von

Manteuffel ended up with the following words, addressed to each one of the commanding generals: "Under the existing circumstances, when an immediate co-operation of the three corps cannot well be effected, and is, perhaps, not even practicable, I do not wish to avoid making known to your Excellency, after what I have just said, my view of the situation, *in order to enable you, at each moment that may be necessary, to conduct your movements before receiving my orders, in case circumstances should demand such rapid decision.*"

Similar instructions were necessary before Metz, when the army of Bazaine was shut up there.

Bad results neither ensued in the one case nor in the other. The unity and practicability of action on the part of all concerned was speedily secured by these means. It will only be necessary not to define too strictly and too artistically these supposed cases, so that it may be possible, without great application of ingenuity, to decide which case has, as a fact, occurred.

All *direktiven* certainly necessitate careful subordinate generalship, and one accustomed to independence.

The old notion of "disposition" has now disappeared. There was attached to it, to a small extent, the idea of a programme of operations for a corps, based upon certain suppositions that go further than a mere order.

We only know, in these days, besides *direktiven*, "army orders," "corps orders," "division orders," &c. The difference between these latter and the former is, that these do not give general ideas, but only prescribe measures, marches to be taken in a certain direction, attacks, &c. A characteristic of them is, moreover, that they are not, as a rule, calculated for various cases, but only for the case *which the commander regards as being most probable at the moment*. As has been already mentioned, they should stop there where doubts begin and the future cannot be perceived. Exceptions will occur, because the line between orders and *direktiven* cannot always be exactly drawn, but they are rare.* In the case of orders, too, although they are cast in much firmer moulds than are the *direktiven*, no rules can be prescribed, yet certain points may be laid down, which will never remain untouched in their essence.

* The phrase often used, but which occurs more in theory than in practice, that the army or division ought to act according to the circumstances of the case, is superfluous. If nothing is determined beforehand, there is nothing left but to act according to circumstances, even when no one has given special permission for this to be done.

To begin with, every order in war, as is already known, is based upon a definite idea of the position of the enemy. Each one is signed *bona fide*, and cannot be regarded as a paragraph of a law, every departure from which entails punishment. But it loses its validity so soon as it is apparent that the supposition on which it was based is wanting.

Every order, accordingly, begins with information of the enemy.

Here, precaution is imperative; it will, as a rule, be well to mention whence the intelligence comes, especially when there are vague doubts as to its credibility. Supposing the orders from above are simply these: "Information of the enemy says, so and so." The contents of this order will be immediately regarded by the recipients as something perfectly definite; disappointments may thus be caused. If the source is mentioned, as "The news brought by country-folk and spies, and information of patrols, says so and so," every commander is in a position to calculate the degree of credibility. This will either excite his mistrust, and his caution, or will enhance and increase his confidence.

In like manner, what the real essence of the intelligence brought is, and what merely the scheme that has been drawn has supplied according to probability, must be strictly distinguished one from the other. If we were to allow our *esprit d'escalier* free scope with reference to the orders issued for the 18th of August, which is pardonable in the interests of study, the following would appear to us to be worth mention.

On the 18th of August, early in the morning, only the left wing of the French position on the heights of Le Point du Jour was perceived. Only here was a permanent touch had of the enemy by the pickets, and only from this part did intelligence come. What the position of the French front was and how far it extended, was unknown. The right wing could not be surveyed. On the morning of the battle, a communication was issued from the great headquarters to the armies to the effect that the view taken was, that the main forces of the enemy stood before Metz and that their position extended as far as Amanvillers. From the extreme left of the French, upon the heights at Bois de Vaux where they were perceived, to Amanvillers, is a German mile; there the bare ridge sinks down to a ravine, through which the railway now runs. The supposition that the right wing of the French was posted on this ravine, and that the front did not extend further, had much in its favour, although it was proved later that it was a deception, and that the French line of battle extended almost twice as far.

that is, as far as Roncourt. Thus quite correctly only "a view taken" was spoken of. But this originally clear situation became by degrees more confused. In the orders which we first cited, the position of the enemy was definitely described as lying upon the plateau between Le Point du Jour and Montigny la Grange. Certainly these orders began with the words, "From information received it may be assumed"; but these words have evidently only reference to the sentence that the enemy would "assert" himself, and not to the sketch of the position, which is clearly described by the words "upon Le Plateau, and between Le Point du Jour and Montigny la Grange." In the *ober-kommando* of the 2nd Army where they were also without information as to the extent of the enemy's right wing, this sketch of the position was simply adopted, and in the orders that were subsequently issued by it to its corps and divisions, we meet, for instance, with the words, "The enemy is posted upon the heights of Leipzig and Bois de Vaux."

Thus, what was originally stated as a supposition, was at last treated as a perfectly definite fact. Even if, in the detailed orders of the *ober-kommando* of the 2nd Army, issued to the Guards we do find a more correct conception of it, viz. "The enemy *appears* to be established upon the heights of Bois de Vaux over against Leipzig in line of battle"; yet by the first communications the idea that the enemy's right wing was to be looked for in the neighbourhood of Amanvillers was corroborated to such an extent that all measures were framed according to this end. The Guards received orders to advance upon Amanvillers, in order there to proceed to turn the enemy's right wing, which for all cases was assumed to lie *south* of that place, whereas it actually stood a good way to the north of it, and the corps at Amanvillers would have struck the enemy about at its centre. Perhaps the illusion shown that day as to the extent of the French line of battle would have been easier removed, had the communications been always and exactly brought into harmony with the real extent of the knowledge of the enemy, and it had perhaps been said "The enemy is established with his left wing upon the heights of Le Point du Jour in line of battle; how far his left wing extends is at present unknown," &c.

It is, of course, incomparably easier to hit upon such things afterwards, when one has seen the consequences of what was then done, than it is in the moment of action. We have, therefore, described our wisdom as being an *esprit d'escalier* which, as a rule, comes to us when we descend the stairs of the council-house, and there then occurs to us what clever things we might have said in

the high assembly we have just left. Yet closer investigation shows us there were persons on the spot who hit the right nail on the head. In a report brought in on the morning of the battle,* which describes more in detail the French line-of-battle, we find these words, "Their right wing covered by brushwood, and cannot be surveyed."

Hence, in drawing up the information of the enemy which introduces the orders, the most precise exactness must be employed, and the one or two lines which form the introduction must be drawn up with clearness.

The second sentence of every order ought to contain the intentions of the commander in great outline. They proceed immediately from the information had of the enemy, and they therefore best come close after it.

That the commander-in-chief and the general should lay down his intentions clearly and plainly appears a matter of course, and it would seem, accordingly, superfluous to say more upon the matter; but even on this point experience teaches us differently.

First of all, it is often difficult to lay down one's own intentions for the next few hours ensuing. Situations in war are so uncertain, that in early morning we cannot possibly see what we shall want to do about nine or ten o'clock in the forenoon. Out of consideration for the troops, the orders for the next day must, as a rule, be issued towards evening, and the night, too, can make many alterations. Very frequently it will not be necessary to regard beforehand aught else than the places at which the troops shall collect the next morning in order to be ready for operations, but this must be laid down with exactitude, in order that the subordinate commanders know that all else is still uncertain; and that they must not, therefore, tie their hands by prematurely touching with the enemy.

Another time, again, the intentions of the supreme command appear to be so patent, that it is considered unnecessary to repeat them in detail in the orders that are hastily committed to writing. They have been the constant theme of discussion in the headquarters, as well as among all the higher officers. It is naturally pre-supposed that everyone must know them. In spite of this, they may all the same have remained unknown in a critical place. How often has not an army corps, that was originally designed to play another part, been called upon to turn the scale. On the 18th August, for instance, the Saxons, of whom it was thought that they would possibly have to undertake the pursuit of the

* From an officer of the *ober-kommando* of the second army.

French division which had marched off towards the west, were at last obliged to turn towards the east, and to effect the turning of the right French wing.*

The intentions of the commander-in-chief ought not, as a rule, to be unknown to anyone of his generals who may be called upon to undertake independent action. We have experienced in 1870 that commanders of brigades and divisions have, by their own unaided decisions, brought about battles which were not in the intention of the commander-in-chief, so that they were thus actually determining, on their own responsibility, the fate of the whole army; *and such events will always happen so long as the troops are animated by the desire of action, and so long as the feeling of independence lives in their commanders. They must always take place whenever great forces co-operate, and the best opportunities are not to be thrown away.* But it is all the more necessary that subordinate commanders should be initiated into the general intentions of the commander-in-chief. The secret will thus only be endangered in the rarest cases. First of all, communications never proceed beyond a narrow circle of the high officers, and then, again, in the moment when the orders are issued to undertake an operation, this latter is usually of so immediate a nature, that, even if information reached the enemy, it would be too late for him to take advantage of it.

Though the time before the beginning of decisive movements, which lead to a battle, is oftentimes very short, there will always be so many minutes as to enable the intention of the commander-in-chief to be expressed in a single sentence with clearness and precision.

As on the 18th August 1870 the one leading idea was not to seriously attack the enemy's naturally strong front until his right wing had been turned, it would certainly have been of advantage to have had this repeated in all orders, even though it must be assumed that it was known to all. As a fact, the attacks made on his front were soon much more energetic than was originally intended. This would have been counteracted if, immediately following the statement as to the enemy's position, it had, on each occasion, been declared how the head-quarters conceived that the attack should be carried out. The intention of the commander-in-chief is the only guide for his subordinate commanders, if the order cannot be carried out in the way intended. It must be brought before them, accordingly, in a palpable and self-evident shape. Following the sentence expressing the intention ought

* This movement, as is well known, decided the battle.

naturally to come the *dispositions*. Their nature is entirely dependent upon the circumstances obtaining at the moment. We shall discuss them, for each individual case, in the following chapters.

As a general rule, an exact estimate of time and space is the chief essential. Mistakes in this respect appear unpardonable, and yet they are often made by great generals.* Only he who is acquainted with war can explain that. A measure is discussed upon the battle-field, and the orders are sketched out. New information is then received, and then has to be considered whether what is intended is still practicable. Commanders come; and the field marshal must speak with them. Some urgent measures claim his attention at the moment. A great cavalry attack which is being executed demands his attention; a charge by the enemy keeps him momentarily in suspense. Troops march by and salute their popular leader with hurrahs. A few words of encouragement and thanks are indispensable; and then he rides to another part, in order to follow up the end of the battle. Then he is reminded, when the last shots have been fired, of the order that has not yet been sent off. His signature is quickly affixed, and an orderly is despatched with it. He has failed to notice that in the meantime hours have passed by, and that the statements as to time ought to have been altered, and that the troops which have been ordered up cannot now arrive so soon as ordered. Therefore, he relies upon the correct understanding of the recipients, and expects of them the necessary modifications. But the mistake has been committed, and cannot be rectified; and whoever will present to his mind in what state of disquietude such orders are often written will be able to excuse it; but, all the same, such occurrences undermine confidence, especially when they are frequent, and the error is only too apparent.

As to the order in which the dispositions ought to follow each other, something must be said; it will materially depend upon the importance of the individual measures to be taken. That first mentioned impresses itself most of all upon the memory. What is most important belongs, accordingly, here, unless it be necessary to explain matters by an introductory disposition. Then come the measures of second and third importance, which have for their object only to support or secure the principal undertaking.

If a natural order like this cannot be found it will be best to begin with the troops first and foremost in the operations, that is to say, for example, with a mass of cavalry which is hurrying ahead

* Blume, *Strategie*, p. 143.

of the army. Whilst in reading the orders we inform ourselves as to the tasks they impose, with the map in our hand, we gain at once a knowledge of the situation of places, roads, &c. which will in the following orders, again play their part, and we are well acquainted with them whenever we meet with them again. Thus we gain in the quickest way a clear survey of the whole.

After all that has reference to the cavalry is done with, the advance guard, the main bodies, the flank covers, and detachments for special missions should be mentioned.

In this way a consecutiveness is attained which, in its main points, agrees with that which takes place in practice, and this arrangement cannot fail to be of advantage in respect of clearness and perspicuity. No one, except in orders issued for retreat, will place the disposition for the trains and columns before those for the troops, or mix both together. Those belong last. We must, moreover, reflect that commands in war must very frequently be not merely written, but also read and understood, under very trying circumstances. If, in the history of war, we meet with confessions that here something has escaped notice and there something has been forgotten, we are readily and easily inclined to pass severe judgment upon them, and exclaim, How was that possible? We do not, as a rule, present to our minds the fact that the general, be he ever so conscious of his situation, cannot be perpetually awake and in bivouac and in motion, and that weariness gets the better of him, as it does of every other mortal. Perhaps discussions, dispositions, and information and reports have kept him awake until late in the night, and that, too, after a day passed in the saddle in winter-cold and snowstorm; and he was just about to lay himself down to snatch a little rest in his poor quarters, an orderly officer arrives with higher orders, only to wake him from the sleep, which he has with difficulty found, to renewed activity. He must at once read, decide, resolve, and send further orders to his subordinates. It frequently happens that an interruption of this kind is caused without any reason. He can with difficulty bring himself to give up the rest which all his limbs energetically demand. By a bad light, at a flickering fire, or outside round bivouac fires, he must decipher the writing that has probably been also written in great haste; maps are fetched, and often a table is only with difficulty found upon which to spread it. The longer under such circumstances the order is, the more names it contains, the more artistic its dispositions, the more the main points are mixed up with details, the more opportunity is there for mistakes, misconceptions, the placing of what is of secondary importance before what is of

primary, and similar errors. Again, let us reflect that, at least in our army, all men of high rank are of an age when both intellectual and physical energies are on the wane. Napoleon, when only forty-one years of age, complained that he lacked his former vigour. "The smallest ride is an exertion to me," he wrote. Frederick the Great, who was forty-eight years of age, poured out his feelings to his friend D'Argens: "I have to perform the labours of a Hercules in an age when my strength forsakes me, when ill-health increases, and when, in one word, hope, the comforter of the distressed, begins to fail me." Of the same age are very many of our commanders of battalions, and have still the greater part of their military career before them. Only few commanders of regiments are so young, and generals of brigades in such years, especially generals of infantry, can scarcely be found. And then only still higher up do these positions begin which are of significance in the great drama of war. In the case of men who approach their sixtieth year, or who have passed it, apprehension cannot possibly longer retain the full rapidity, and memory its old vigour.

Consideration must also be paid to this in the orders, they must be easy to apprehend, and easy to remember in their principal parts. Thereto primarily belongs that from the orders issued respecting evolutions and battle, all other matter should be excluded. The regulations respecting trains, columns, and transports cannot certainly be left away, for the troops must know where they can find their commissariat and their ammunition, and where their hospitals, &c., but it is sufficient for the most part if the dépôts are mentioned. The manifold small dispositions that are still necessary in this respect, are better detailed in a special supplementary section. Then what is important and what has reference to the movement of the troops, what the commander must have with full clearness before his eyes, presents itself then when stripped of all additions, far clearer to view. When, for instance, General Chanzy, in his instructions of the 8th January, gave a long list of appointments and promotion of officers and doctors, adding, according to our measure, to the order of operations about as much as is contained in the "*Militair-Wochen-blatt*," this we may much readier find fault with than if he had, in the first part of his orders, merely gone too deeply into details, and had assumed a tone of instructor. After these notices as to personal matters, dispositions next followed as to the occupation of the road leading from the forest of Marchenois, that is a part of the order of battle, and at the close of it a reminder to the general in command to

send frequent news. It is evident how easily this might have been overlooked, if not at the first reading of it, at all events later.

An instruction which should never be wanting is, where the commander is to be found, in order that reports and questions may reach him with certainty.

The structure of every order given in war ought to be as patent to view as that of a Greek temple; only then will it have clearness of conception and definiteness of action.*

We must still devote a few words to the influence distance exercises upon commands, because it makes itself felt also in judging of situations in battle.

The immediate impression has always the strongest effect, and it lies in the nature of the case that a more distant danger is estimated less than that which is nearer. Thus it comes about that in war each one believes that where he is standing in the fight the fray is the hottest, and that in his theatre of hostilities the situations are most difficult. On the one side we can be thus led to demand more of others than of oneself, because we perceive plainly enough the task that our neighbour ought to fulfil, but not the impediments in his way. On the other side, under certain circumstances, it is productive of good not to be obliged to think and to act under the immediate impression of danger and difficulty.

Experience proves that boldness of decision increases in proportion to distance. We survey with a calmer view a more extensive part of the field of battle, and perceive better the subordinate importance of a matter which appears to those concerned in it as being of the utmost moment, because they are immediately confronted by it, and we can more easily devise means which can equalise, by successes on one part, a possible disaster on another.

Beyond doubt the supreme administration is very much benefited

* Not without importance in the framing of orders is the use of maps. A concise style we take for granted. But it ought to be made known in every army, according to which of the different maps which are at their disposal the orders have been framed. Not only does each several map present a different picture of the "terrain," but the writing of the names of the places is often dissimilar. What one map brings into prominence in great letters, another shows in smaller and scarcely readable characters. If, now, different maps are used by the commanding officials as the recipients of those commands, great loss of time can easily arise through searching. The author, who, during the war of 1870-71, belonged to an *ober-kommando*, can remember that the whole of one night was spent in trying to find the name of a farm which was mentioned in a report. It was only when by chance another map was taken up that it was discovered; for, on the latter, which had been used in drawing up the report, the name was given in large letters.

by a certain distance separating it from the battle-fields of the several armies. It must be, in every emergency, the centre of energy; must always be ready, whenever a subordinate general is in doubt, to undertake the responsibility for him, and to weigh with full objectivity the importance of all operations, one against another. Therefore it ought to be withdrawn from the influence of the disquietude and anxiety in which the daily life of the troops standing closely confronting the foe moves. Cool calmness ought to prevail in the atmosphere surrounding it. Only in the few critical moments ought it to descend into the excited arena of battle, in order, under its immediate influence, to make its dispositions. If this happens too frequently, the plan of the whole will be lost, and the sight of misery will gradually prejudice the bent of their schemes.

It was striking how that in the winter campaign of 1870-71 the dangers that threatened the Germans in the provinces were always more lightly regarded in the great quarters than in the armies which were in the field, protecting the besiegers of Paris against all attempts made to relieve it. The strength of the army of General D'Aurelles de Paladines that was forming on the Loire, and round which the hopes of France were centred, was at first under-estimated. It was only after the battle of Coulmiers that it was called "entitled to respect," and it was said that it possibly numbered sixty or seventy thousand men and more. Up to that time it was regarded as a comparatively easy task to compass its destruction.

Also in the divisions that were marching against it, doubts increased in proportion as the distance between grew less. Whilst, at first, an easy victory was hoped for over such loosely organised troops, and the end of the campaign was expected in Bourges and Tours; as time went on, information, views, and decisions were rectified; difficulties became more apparent; the great numbers of the enemy were seen more plainly, and found more careful consideration. Doubts as to the practicability of the schemes were heard aloud. Besides the plans of attack, plans for preliminary defence were made, and the theatre of action was placed closer home, on the Loire, and not further away.

There was, as a matter of fact, good reason for precaution.* Although the troops opposed to us were in no wise as good as those of the fallen Empire, yet the campaign proved, in December and

* As the *directiven* cited in Chapter ciii. shows us, this precaution met later, in the highest quarters, with complete approval.

January, much more serious than had been anticipated. In other parts of the theatre of war similar things were happening.

As a fact, however, a very happy interchange took place. Whilst the justifiable vigilance of the armies entrusted with this task diminished the possibility of disaster, the more exacting wishes of the supreme administration of the army spurred them on to activity in a way not to be under-estimated.

Here it might be said that the cleverest and the boldest plans must, in consequence, have been made round the green table, where the direct influence of danger was completely excluded, and where the quiet necessary for thought and work was the greatest. The presence of the commander-in-chief only appeared necessary at the time of decisive battles, and then, even, the oldest general might be entrusted with the command. The telegraph, in the year 1870-71, could have sent orders from Berlin quite as well and quite as quickly to Vesoul and Amiens, as from Versailles, so, under the present conditions, a strategy might again be admissible such as was in early times said of the Hofkriegsrath of Vienna.*

We have actually experienced an instance of it. The French Ministry of War acted in a very similar manner. It drew up at the green table in Tours and Bordeaux plans of campaign, and sent them to the generals, without, for the most part, being with the armies in any other communication but that of the telegraph wires. The delusion that it was possible to guide the fate of battles from the quiet of a study led, however, in the end to defeat. The warlike ideas of Gambetta and de Freycinet suffered throughout from a want of harmony between wishing and being able, between ends and means. In all these plans a right appreciation of the young Republican troops was wanting.

If, accordingly, the supreme administration of the army does well, as a general rule, to keep itself at some distance from the theatre of war, yet this distance must not be so great that lively internal contact altogether ceases. The general in command must be able at all times to feel the pulse of his army. Of its internal emotions enough must reach him as to prevent his being attacked too much by immature impressions, and to permit of his having the right sense and feeling for what he can demand at any given

* We confine ourselves here, by way of example, to the popular idea of the activity of the Hofkriegsrath. It has lately been questioned in Austria as to whether this department, at least in the Seven Years' War, had any influence whatever upon operations; it is said to have been an administrative department.—*Cf* Communications of the K. K. Kriegs-Archiv, May number, 1879, of the Austrian Military Periodical (Streffleur), p. 8 *seq.*

moment. The establishment of the great head-quarters upon the scene of action leads to the result that they remain with their plans upon the soil of reality.

It is also certainly advantageous that the supreme command of an army should, on marches and in over-crowded quarters, feel a little of those hardships of war which the troops drain to the dregs. That prevents them from giving commands incapable of fulfilment, and will oftentimes reduce to its proper measure the fear of an impediment that in the distance looks greater than when viewed close by.

The same thing is true of the battle itself as of the conduct of great operations. High-placed commanders are rightly warned not to come too near to the line of battle. A proper measure of distance must here also be kept.

Clausewitz has left us, in the second volume of his work upon war, an excellent sketch of the nature of the different zones which surround the arena of action, which runs as follows: "If we accompany a novice to the battle-field, as we approach it the ever louder roar of the artillery alternates with the howling of the bullets, which now attract the attention of the inexperienced to it. The balls begin to strike into the ground before and behind us. We hurry to the hill upon which the commanding general, with his numerous staff, is posted. Here the falling of cannon-balls and the bursting of shells is so frequent that the seriousness of life pervades the youthful enthusiast. All at once a friend falls—a shell bursts into a knot of men, and produces involuntary emotions. We begin to feel that we are no longer perfectly calm and collected. The bravest among us is, at all events, somewhat absent-minded. Now let us step into the battle which rages before us, almost like a play, and go to the nearest general of division. Here ball follows ball, and the noise of our own artillery increases the confusion. From the general of division to the general of brigade. This man, of well-known bravery, keeps carefully behind a hill or behind trees, a certain sign of increasing danger. The shrapnels rattle in roofs and fields, cannon-balls whistle in all directions by us and above us, and the frequent whistling of bullets is heard. A step further to the troops, to the infantry, that has undergone a hot fire of hours' duration with indescribable endurance. Here the air is teeming with hissing bullets, which make known their presence by the short sharp sound with which they fly an inch off ear, head and life. Compassion at the sight of the wounded and fallen beats with anguish at our throbbing heart."

This sketch is, in these days, only too true; only in consequence

of the greater range of modern fire-arms the zones are considerably broader. The increased precision of fire has made also the impressions greater. With the shocks and sheaves of our weapons of precision, the thickest rain of bullets of olden times cannot for one moment compare.

There are, as we have already stated, only very few men upon whom danger makes no impression. Clausewitz says that the novice would not enter any one of the zones without feeling that the light of thoughts is here set in motion by other means, and is broken into other rays, than it is in mere speculative activity. If the impression of danger does gradually become blunted, yet there still remains something of it, as a rule, even in the most experienced soldier. The deeper he plunges into the fight, the more rapidly does his pulse beat, and the more hastily though less clearly does he think, and the more are his thoughts interrupted by contemplations, which centre in his own person and in the end that may possibly await him. The man has not here anything more valuable to lose than his earthly existence, and he takes a lively interest in its possession. The more that clear-sightedness and intellectual influence upon the course of a battle is demanded of a general, the more must he keep himself out of serious danger to life and limb. For the commander-in-chief, a station is the best from which he can survey the lines of march of his advancing columns, as well as the enemy's line of battle. Such places are frequently only found at a great distance off, where one is completely beyond the range of fire; but it would be an entirely false pride to abandon them for this reason. By displaying contempt for death, a commander-in-chief can often not effect more than can any subordinate officer; but by clearness and cool deliberation in his decisions, he will, on the other hand, be the benefactor of hundreds and thousands.

During the battle of Noisseville, on the 31st August and the 1st September, the head-quarters of the beleaguering army round Metz were stationed upon the Horimont, a precipitous spur on the left bank of the Moselle, about two miles as the crow flies, and three by road from the field of battle. Originally it was only intended to make from there a survey, for which purpose the excellent telescope of the station was very useful. But it was quickly perceived that no other position was so well suited for the commander-in-chief and his staff during the battle that was now beginning as this, and the commander-in-chief remained there with his staff, whilst single officers were, as need required, sent down into the battle-field.

Like a panorama, the whole country about Metz lay at the

foot of the Horimont, with the clustering houses of the city and its suburbs, the fortifications, and the French encampments. All the movements of the enemy across the valley could be clearly seen, the march up of the French army into position, its deploying, and its advance to the attack. In the same way the progress of the German columns that were advancing to the field of battle, could also be followed, and a marvellous insight gained into the position of both sides, like an umpire has at "*Kriegspiel*." Not only the position of the battle could be discerned, it could be also determined what precautions should be adopted beforehand to meet the measures taken by the enemy. Therefore it is that this battle displays an extraordinarily happy co-operation between the supreme command of the collective forces and the individual activity of the several commanding generals upon the field of battle.

Prince Frederick Charles, the commander-in-chief, intended to leave General Von Manteuffel, who was fighting at Noisseville, the undiminished honour of the victory; but even apart from this personal reason, his position upon the Horimont would have been perfectly correct. If the lofty station of observation had been abandoned, the *ober-kommando* would have not only at once lost the survey—and, at the same time its telegraphic communication—but, during the ride of a mile, its activity would have been interrupted.

A change of station, during a battle, is of itself productive of great inconvenience. It entails that reports go astray; under-commanders, who look for the commander-in-chief, do not find him, or only find him when it is too late. A point, from which all the lines of the army and all portions of the battle-field can be simultaneously surveyed, is for the supreme commander of such great value and can so seldom be found, that it should not be relinquished without the most urgent reasons, even though details are, owing to the great distance, withdrawn from view. If the course of events changes, and the crisis takes place elsewhere to what was expected, the first position certainly loses, for the most part, its importance. It must be changed at the right time. For instance, in the battle before Metz of the 31st August and the 1st of September, this would have been the case if the battle had moved away from the fortifications, and the attempt of Marshal Bazaine to cut his way through had succeeded. Prince Frederick Charles would not then have hesitated to have proceeded to the new scene of action.*

* The signal for this would probably have been the silence of the French batteries. From the fact that the forts on the east side of Metz were unceasingly

On a smaller scale the reasons for the choice of position change. The general in command of an army corps will only behave like the commander-in-chief if he finds himself in a similar position—that is if he is acting independently with his army corps. If this only forms a link of the line of battle, a more prompt interference with the dispositions of the battle, and accordingly a closer prospect of the whole, is essential. Further down to the commanders of divisions, brigades, and regiments, the demand made upon them to remain closer to the action and the danger increases; for the reasons for their having a distant view diminish, whilst those for their taking rapid and decisive action, according to the impulse of the moment, increase. The immediateness of impressions is here even the fruitful spring of activity. The subaltern officer, finally, dashes into fire at the head of his company, and fires them by his example.

As is always the case in war, here also circumstances decide. But we must, at all events, make it clear that a fit choice of a place of observation is a very material factor of success in generalship. It would be a mistake to under-estimate the importance of this apparently purely external moment.

III.—THE CONDITIONS OF SUCCESS IN WAR.

We should do strategy the best service could we but enumerate the conditions precedent to success in war; but, unfortunately, we should never come to an end. We are only in a condition to bring into prominence some of the most important ones.

Among them *one* may first be mentioned which, as a rule, is very unsympathetic to soldiers, that is politics.

Blucher wrote at the time of the Congress of Vienna: "All ye politicians are bad knowers of men: the good Vienna Congress is like a fair in a small town, whither everyone drives his cattle, either for sale or exchange. We have brought here a first-rate bull, and have got in exchange only a miserable cow, so say the Berliners." The old hero, from sheer vexation about "politicians," wanted to take his leave of the army forthwith; but at that time his wrath did not alter one tittle in the great rôle which politics play in all matters appertaining to war.

engaged in the struggle, it was possible, from the Horimont, to perceive that the battle was not moving from its place, but was surging only within its original lines. In the lines of smoke, which were plainly visible, its extent towards the wings could be exactly determined. Not so the advancing and retiring of the front, because, from where the German commander-in-chief was stationed, the French were seen fighting on the south side of the valley, and only beyond this, again, were the German lines visible.

War is the continuation of politics with weapons in hand; hence its influence even upon the manner of waging war. If this influence be blamed it were more correct to blame politics. A bad policy will, of course, have a bad effect upon war.

We must not, of course, conceive of politics in the narrow sense of the term, and only understand by it what we commonly call external politics. Internal politics are quite as material. We will, accordingly, take the word "policy" in its widest meaning.

Upon policy the whole condition, the feeling, the constitution, and the moral and physical affairs of a state depend; and upon these depends, again, the waging of war.

Clausewitz says: "The enormous effects of the French Revolution are evidently to be sought much less in the new means and ideas of the French mode of waging war, as in the perfectly altered science of State policy and administration, in the character of the Government, and in the condition of the people, &c. That the other Governments saw all these things incorrectly, that they with ordinary means wanted to hold their own with forces that were new and crushing—all that was mistaken policy."

It was a mistake of policy that Prussia did not, in the year 1805, when backed up by powerful allies, with a numerous and well-equipped army, appear upon the theatre of war to speak the decisive word. Though some faults still adhered to its military system, its general constitution at that time was so capable that, had it made an intelligent use of its forces, success would scarcely have been doubtful. But a mistaken policy not merely left these advantages unemployed, but its evil effects went even further. The best and the most clear-headed men in the Prussian army had certainly reckoned that this time an end would be put to the eternal waverings of the period of neutrality, and that Prussia would at last appear as an actor upon the stage of the world. Therefore, when nothing came of it, the disappointment was more disheartening than at any other previous time. A feeling of despair, a feeling of shame and hopelessness, took possession of many hearts. A feeling spread in the army that they ought to fight now for the sake of honour. The consciousness of having neglected the best opportunities increased the disquietude of the Prussian military party, and at last brought it about that it broke loose at an immature time in 1806. A similar fate was France's in 1870. The opinion that in 1866 a golden opportunity for consolidating afresh the prestige of France in the whole of Europe had been irretrievably lost, aroused the national ~~restlessness~~, the restlessness of which drove Napoleon III., after a vain

attempt to hush it in 1867, into the decisive struggle at an ill-starred hour. Prussia in 1806, and France in 1870—two episodes in the history of neglected political opportunities—prove to us unerringly the influence politics exercise upon war.

In like manner, that Prussia in 1806 entered upon the struggle for existence with its ordinary military organisation, which had been kept prepared for former war-purposes, whilst the people should remain in its normal condition, should look on and not be excited, was an error of policy. That system could at all events be regarded as sufficient to ward off the first shock of the French active army, that was at the moment collected in Germany, but not the storm of the unfettered national energy of France. Politics had placed at the disposal of France most unusual means, and thereby rendered possible a display of energy in waging war otherwise inconceivable. The first step of the Prussian State ought to have been also to make unheard-of levies. But for this purpose it was necessary that politics should, a considerable time before the war, have brought the nation into a condition that would have allowed of the employment of all its forces for war.

Clausewitz has explained most aptly the relations obtaining between policy and war.* In these days some more extended points of view are concerned. War has not withdrawn itself from the effects of policy; but its influence is simplified in comparison with former times. If Clausewitz talks of wars, such as the wars of coalition, or the Austrian War of Succession, when the Allied Powers bound themselves to support one another with a definite number of combatants, when operations were undertaken with a part and not with the whole of the forces, and policy alone stood in the foreground, we, in our day, can disregard all this. Such conditions are scarcely conceivable to-day in Europe. Even the attempt of Russia to crush the much weaker Turkey in 1877, with a *portion* of its forces, completely failed. Campaigns like the German-Danish campaign of 1864, or the English in Egypt, in which an expeditionary corps was sufficient to bring to reason a weak but defiant enemy, we regard as military executions. They can only excite our interest in a small degree. The principles of our mode of waging war in these days must be explained by great national wars. If two European Powers of the first order clash together, their whole organised forces will, from the outset, be set in motion for the decision of the matter. All political considerations, such as attach to the lukewarm half-ness of wars of alliance,

* *Von Kriege*, vol. iii. book viii. chap. vi. Cf. also Blume, *Strategie* (Berlin, 1882), p. 25.

fall to the ground ; and without that there is still enough to consider.

The causes of war are of a political nature. We have already set forth that wars are only possible for the protection of great political interests. These interests certainly sometimes assume an extraordinary appearance. A breach between nations is apparently due to a mere nothing. In 1877 the world might easily have witnessed the drama of a bloody struggle for a question of quite subordinate importance. The candidature of a Hohenzollern for the throne in Madrid was certainly no sufficient reason for two nations like the German and the French to array themselves one against the other in mortal combat. In all such cases, however, the fact is that the apparent motive is really only a pretext for the political antagonism which has arisen from protracted irritation.

We approach, in a certain sense, the original state of nature, when wars between neighbours could only be the result of enmity ; but this is the difference which obtains now, namely, that this enmity is not a purely instinctive one, but springs from the collision of ideal interests, to which power and respect in a prominent degree belong. Both are political moments. Further, politics determine the manner in which war is begun. Had our policy been a wavering one we might, instead of the events of 1866, conceive of a struggle between Austria and Prussia, in which the last named allows itself to be driven, and keeps on the defensive, in order not to be forced to surrender Schleswig, where, in consequence, armies were drawn up to defend it, and where, if Austria's conduct inspired confidence, not only Lesser Germany but France also would have taken part in the struggle. A similar state of affairs may be conceived of as happening in 1870. What a different course warlike events would thereafter have taken is easy to calculate.

Policy again regulates the relations not merely of those States immediately concerned, but also those of such as are indirectly interested in the final issue. Their favour or disfavour can be of very great significance, impeding the course of events, or furthering them. Politics, again, as a rule, determine the moment for the outbreak of hostilities, upon the happy choice of which much depends. They, in short, create the *general situation, in which the State enters into the struggle*, and this will be of material influence upon the decisions and attitude of the commander-in-chief, and even upon the general *esprit* of the army.

(*To be continued.*)

The Origin and Progress of the Chinese Army.

By ANDREW T. SIBBALD.

BURMAH, which England annexed on New Year's Day, formerly was part of the dominions of the self-styled "Son of Heaven," so far back as 1284 A.D. ; and the Burmese adjoining the Celestial Empire use a monosyllabic language, spoken with distinctive tones, like the Chinese.

Lord Salisbury, speaking at the Guildhall on the subject of Burmah, stated emphatically that we should act with the good-will of the Chinese. It would gratify their sensibilities to assume control of the territory as far south as Bhamo ; while the assumption of sovereignty there would carry with it the obligation to maintain order among the hill tribes.

The present Emperor of China, who only a short time back ascended the Dragon Throne, has a right to claim the services of all males from sixteen to sixty for the army, and all the forces and revenues of the Empire are his.

Inferior to Turks, Persians, or Indians in military knowledge, the Chinese infinitely surpass them in the arts of peace ; and there is a species of vicious regularity in their government, morals, and science, which, while it gives them a claim to civilisation, still leaves them far behind the nations of Europe. Less barbarous than those around them, the people of that great Empire have maintained a perpetuity of laws, manners, and maxims ; and as each succeeding dynasty of kings supported the civil institutions of their predecessors, the tide of conquest has repeatedly passed over the greater part of China, and yet left it unchanged.

The vast Empire of China, inhabited by a most ingenious and intelligent people, has been held in subjection, for upwards of 200 years past, by a horde of barbarous Tartars—the Manchu Tartars. The conservative element of the Chinese social system, which has produced this remarkable phenomenon, I conceive to be that perfect freedom of employment and full participation in every advantage which their country can afford, except military command, has been given to the natives of China. It has been done in the most systematic manner by means of public examinations periodi-

cally held—those who acquit themselves best being placed, as a matter of course, in Government employment.

The Chinese army is divided into two distinct forces, which differ as widely as the troops who fought in the Crimea do from those who conquered at Cressy. The one is that which is constituted and trained in the orthodox Chinese manner, and the other is formed of the regiments which, since the war of 1860, have been drilled and armed on the European model.

The Chinese and Manchu soldiers are chiefly exercised in the use of the bow, as well on horseback as on foot; then in that of the matchlock; and, lastly, of artillery. The Chinese soldiers do not acquire much dexterity in any of these exercises. Naturally of weak constitutions, and accustomed to a tranquil and idle life, they want the strength necessary to draw the bow. They are indifferent-looking soldiers. When their artillerymen fire a gun they cautiously apply a light to the match, and instantly run back a great many yards, fall on their faces, and lie squat till the tube has sent forth its contents.

In 1696 the Chinese soldiery consisted of cavalry, divided into eight standards, each of 100,000 men. To every standard belonged a general, who was always a petty king, or great lord, and was called General of the Green Standard, of the White, &c.

The present Army of the Green Standard, or the Chinese provincial troops, numbers 1,000,000 men.

Soldiery descended from father to son, for the Emperor did not only allow them competent pay, according to their quality, but also rice for the whole family, the horse, and provender for him, without sparing, because all came from the provinces, which paid it as tribute. The petty kings had pay allowed them to keep 12,000 men and maintain themselves with due grandeur, besides others they kept at their own expense. Besides their ordinary pay and allowances, the soldiers also receive donations from the Emperor, on particular occasions; as when they marry, and when they have male children born. On the death of their parents they obtain a "gift of consolation," as did their families when the soldiers themselves died.

The multitude of military officers, as colonels, majors, captains, &c., was endless. They were all included under the title of *Man-darins*.

The first mention of anything like fire-arms in the Celestial Empire is in the year 1219, when Genghis-Khan was penetrating the provinces of China. It is stated that the Chinese, from the turrets of the walls of Tsao-yong, played their machines, called *pao* (the

present name of guns), by which they killed great numbers of the enemy. Again, when Ogdai-Khan laid siege to Lo-yang, the Chinese commandant, Kiang-chin, invented a kind of *pao*, which hurled large stones to a distance of a hundred paces, with such accuracy as to strike any point that might be desired.

Bamboo staves, hooped together, was, no doubt, the first attempt in China at the use of cannon, to which succeeded, probably, those of plates of malleable iron, also hooped together, several of which kind have been seen within the walls of a city near the Great Wall. These large stone balls, as well as stone mortars, were used in China, according to the authority of Father Amyot, so early as the eighth century.

It is pretty evident that the Chinese had but an imperfect knowledge of cannon, before the arrival of European missionaries in the capital, who taught them how to cast them; at the same time they were instructed in the method of fortifying towns, and constructing fortresses according to the rules of modern architecture.

At present arsenals have been established, and all kinds of firearms are successfully manufactured. Foreign breech-loading rifles, Krupp's ordnance, and other weapons have been imported.

The principal duty of the Chinese army before the conquest by the Manchus was to guard the Great Wall against their subsequent conquerors, and it consisted, according to some writers, of a million; while others say a million and a half. As in Russia they sent criminals to Siberia, so here they were sentenced to serve at the Wall. It was constructed entirely with a military object.

Although the Manchu Tartars have almost wholly abdicated their own manners and adopted those of the Chinese, yet, amid this transformation of their primitive characters, they have still retained their old passion for hunting, for horse-exercise, and for archery. Descended from the ancient Scythians they have preserved to this day the dexterity of their ancestors in the above-mentioned sports.

The Scythians derived their name from the Teutonic *scheten* or *schuten*, "to shoot," in which art this nation was very expert; hence the name Scythian or archer. They were divided into several tribes; and that philosophy and moderation which other nations wished to acquire by study, seemed natural to them.

The existing military system is that which was introduced into China by the reigning dynasty, who are descended from the Manchu Tartars. It is based upon the organisation prevailing in Manchuria at the time China was conquered by the former kingdom. The first time mention is made of the Manchurian army is in the

hunting-field. It was the habit of the King on stated occasions to go out hunting, accompanied by bands of beaters who, for peculiar purposes connected with the chase, were arranged under four banners, coloured respectively yellow, white, red, and blue. These beaters, by degrees, learned to combine the duties of a standing army with those of huntsmen, and, ranged in the same order and under the same banners, followed their leaders with perfect indifference either into the coverts or the battle-fields. As they became less of huntsmen and more of soldiers, and their numbers increasing, the banners had to be doubled. This was done by dividing each banner into the plain and bordered colour, in the following order: (1) bordered yellow, (2) plain yellow, (3) plain white, (4) bordered white, (5) plain red, (6) bordered red, (7) plain blue, (8) bordered blue.

The Manchu army was thus constituted when it marched, in 1644, into China. During their victorious progress to Peking, the forces of the invaders were considerably augmented by the addition of a complete division of Mongolian and Chinese sympathisers to each banner. These composite corps were rewarded for their subsequent conquests, which led up to the seizure of the throne, by a decree which set forth that to one and all of their male descendants for ever should belong the privilege of constituting the Imperial banner force. To all others its ranks were closed. The duties also of guarding the capital and protecting the person of the Emperor were alone confided to these troops. By this means the Sovereign secured to himself a faithful body-guard. The descendants of the original bannermen have become so widespreading that the line of demarcation between them and the Chinese has become nearly, if not entirely, obliterated.

According to the present law in China there is, every third year, a census made of the population of each banner, and all persons who do not cause their names to be inscribed on the roll are deemed no longer to belong to the Manchu nation; those, therefore, of the Manchus whose indigence induces them to desire exemption from statute labour and military service do not present themselves to the census enumerators, and by that omission enter the ranks of the Chinese people. Thus, while, on the one hand, constant migration has carried beyond the Great Wall a vast number of Chinese, on the other, a great number of Manchus have voluntarily abdicated their nationality.

The whole population of Peking at the present day, speaking generally, is mostly composed of banner families. The bannermen stationed at Peking consist of 150,000, who are divided into

1,150 *tsoling*, or companies of from eighty to ninety men apiece. The support of this unwieldy force is a heavy tax on the people. Pay to the amount of £100,000 is distributed monthly among the Peking troops alone, besides the allowance of grain which is dealt out to each household. In addition to this main body, and recruited from it, are five principal brigades, of which the Imperial Guard is the *crème de la crème*. The special duties of this favoured corps of Manchus and Mongols, are to protect the apartments and person of the sovereign, and to guard the twenty-four gates of the "forbidden city." None are eligible except those belonging to the above nationalities. Their weapons are bows and arrows, and only when called upon to escort the Emperor to his summer palace at Yuen-ming-Yuen do a certain number of them carry trident halberds and swords or daggers. The "vanguard division" is composed in precisely the same way as the Imperial Guard, and has half its men armed with matchlocks. At the triennial review of the entire banner force, its privilege is to hold the foremost place of honour. They furnish part of the guard at the gates of the "forbidden city." The "flank division" is manned by Manchus and Mongols. With these troops also bows and arrows are the favourite weapons, though a small number carry matchlocks.

The men forming this division are taken in proportion of thirty-four men from each *tsoling*, whereas the Imperial Guard are chosen in proportion of four men to each *tsoling*. Six times a month they practise archery on foot; and every spring and summer, dressed in armour, they go through the same exercises on horseback. This division furnishes a guard of two men at each gate of the "forbidden city," whose duty it is to sit holding a red bar across the gateway, and who rise only to princes of the blood.

The "light division," as its name indicates, is especially intended for service requiring strength and activity.

The fifth great division is that of "artillery and musketeers," which is divided into two brigades, one of which is quartered within and the other without the city. Though nominally devoted to the use of fire-arms, they, like the rest of their comrades, depend more especially on the weapons of their forefathers—bows and arrows. Their artillery practice is the merest farce.

But besides these five grand divisions, there are a number of different corps to whom are attached duties of a more or less military character—such, for instance, as bucklermen, whip-bearers, falconers, camp-followers, and *orbo*. These last carry a kind of *cheval-de-frise*, called by the Chinese "stag-horns," with which

they enclose the camp of the force to which they are attached. The "stag horns" are made of bamboo poles, which are so thrust through horizontally placed beams of wood as to form supports to the beams, while at the same time they present a *cheval-de-frise* to the enemy.

Although the head-quarters of the eight banners are stationed at Peking, large divisions are quartered at other points in the metropolitan province. Altogether, forty-one out of the total number of fifty-two divisions are stationed in the capital and the surrounding districts; the remainder are in Manchuria, Turkestan, and in eleven of the outlying provinces of China proper. The men belonging to these local corps have nearly lost all semblance of the martial bearing which it is charitable to suppose they once possessed, and which is to some extent still maintained in the metropolitan regiments. The only quality which distinguishes them from the civil populations is an unusual aversion to all kinds of work. Possessed of pay and allowances which are just sufficient to eke out a meagre existence, they find themselves raised above the positive obligation to work, and being thus free to choose between idleness with poverty, and work with a competence, they have in ninety-nine cases out of a hundred deliberately chosen the former combination.

Each banner has its separate territory, and a tribunal, having its jurisdiction over all the matters that may occur in the banner. Besides this tribunal there is, in each of the eight banners, a chief called *Ou-Gourdha*. Of the eight *Ou-Gourdhas* one is selected to fill, at the same time, the post of Governor-General of the eight Banners. All these dignitaries are nominated and paid by the Emperor of China.

The banners, which are really an army of reserve, were formerly situated in a district called Tchakar. In order, no doubt, that this army might be at all times ready to march at the first signal, the Manchus were severally prohibited from cultivating the land. They might live upon their pay and the produce of their flocks and herds. The entire soil of the eight banners was inalienable.

It is in these pasturages of the Tchakar that are found the numerous and magnificent herds and flocks of the Emperor, consisting of camels, horses, cattle, and sheep. There are 360 herds of horses alone, each numbering 1,200. A Manchu Tartar, decorated with the white button, has charge of each herd. At certain intervals, inspectors-general visit the herds, and, if any deficiency in the number is discovered, the chief herdsman has to make it good at his own cost. The Manchu warriors have the character

of being a turbulent and haughty race, and sometimes occasion much difficulty to the Chinese officers of the Government, from whose jurisdiction they are generally exempt, and are subject only to officers of their own nationality. Nearly all the mounted soldiers in the Chinese army are of Manchu descent. A great difference seems to exist between the pay of Manchus and Chinese. One of the former, being a foot-soldier, receives about 5d. a day, with allowance of rice; one of the latter, only 4d., without the rice.

A military life is much more the bent of a Manchu than of a Chinese. The hardy education, the rough manners, the active spirit, the wandering disposition, the loose principles, the irregular conduct of the former, fit him better for the profession, practice, and pursuits of war than the calm, regulated, domestic, philosophical and moral habits of the latter. Warriors seem more naturally the offspring of Tartary, as *literati* are of China.

The number of literary mandarins in China is computed at upwards of 14,000, and those of arms at 18,000; the former, however, are considered as the principal body in the Empire, and the preference is thought to damp the military ardour of the nation in general, and to be one cause of that weakness in war for which the Chinese are remarkable.

The Chinese military mandarins always mount their horses on the right side. The word "Mandarin" is not Chinese, being from the Portuguese *mandar*, "to command," and is used to denote a class of persons in China which includes civil officials, military officers, *literati*, and, in general, what may be considered the nobility of the Empire.

In China proper, or the "Middle Kingdom," which contains eighteen provinces, there are eighteen Titus, or generals, only employed in time of peace, but in time of war the rule is departed from, and other Titus, sometimes in all to the number of 200, are employed under the Governors, or Futais, of each province, in command of distinct levies raised for a specific purpose.

Legitimately, there could no more be two Titus in a province than two Futais. The Titu of a province is commander-in-chief of its naval, as well as its military forces. In China, the highest rewards for military services are unlike all other official honours, which die with the wearer, and are hereditary. Nine titles of nobility, viz. Kung, or Duke, How, or Marquis, Pih, or Earl, Tsze, or Viscount, Nan, or Baron, and K'ing-chè Too-yü, K'e Too-yü, Yun K'e-yü, and Ngan K'e-yü, which may be considered equivalent to as many degrees of knighthood, are set apart for military

heroes. With the exception of the last title, all these are hereditary during a specified number of years. They have the peculiarity, also, on occasions, of not only descending to future generations, but of ennobling the dead, and especially those who have been killed in battle.

On military officers, as rewards for distinguished services, are conferred, not only honorary titles, such as Tseang Keun, "general," &c., but articles of clothing, among which the most coveted is the yellow riding-jacket. This jacket is supposed only to be worn when in attendance on the Emperor, and, though it is invariably called "yellow," the colour, as a matter of fact, follows that of the banner to which the recipient belongs. Only two Europeans have been granted this distinction, namely, Colonel Gordon and M. Giguel.

Next to the yellow jacket, the peacock's feather is the Imperial reward which is most highly prized, and of this distinguished decoration there are three ranks. The highest is the San Yen hwa-ling, or three-eyed peacock's feather, which is conferred only on Imperial princes or nobles of the highest degree, or for the most signal military services. The second, the Shwang yen hwa-ling, or "double-eyed peacock's feather," is bestowed upon lesser dignitaries, and for less conspicuous merit. And the third, the Tan yen hwa-ling, or "single-eyed peacock's feather," is given as a reward for good service, without regard to rank. One other kind of feather, known as the Lan ling, "blue feather," or, more commonly, Lao kwa ling, "crow's feather," is reserved for all officials under the sixth rank who have won their spurs on the battlefield, and, according to regulation, it is a distinction which is open also to the rank and file of the Imperial Guard. But more commonly private soldiers receive as a reward for merit an oblong plate of thin silver, on which is inscribed the character *shang*, "reward."

By the present dynasty a Manchu title of distinction has been imported into the Chinese service, and is now much coveted, both for the honour it brings, and for the increased allowances which the bearers of it enjoy when on active service. Ba-loo-roo, "Brave," is a title which, by Imperial order, is added to the names of soldiers who have performed acts of gallantry in the field, and, in cases of more than ordinary merit, it is supplemented by prefixed epithets, such as "magnanimous," "heroic," &c.

As an additional mark of the Imperial appreciation for military services rendered, it is permitted to certain officers to ride on horseback a specified distance within the outer gateways of the palace when bidden to an audience, instead of being obliged to dis-

mount at the gates of the "forbidden city," as all officials now are who do not possess this privilege.

In China, as elsewhere, it is fully recognised that the same power which grants honours and privileges may at any time withdraw them, and each and all of the distinctions mentioned are revocable by Imperial decree.

Besides the "Eight Banners," the Chinese Government, fortunately for its own stability, has another force to depend upon, viz., the army of the Green Standard, or Chinese provincial troops. This force, which is made up of 1,000,000 men, is composed of both soldiers and sailors. The men of this force in each province are placed under the orders of the Viceroy, Governor, and Tartar General, in such proportions as to equalise the power in the hands of these officials. Their special function is to keep in check the dangerous classes, and on rare occasions they are called upon to take the field against the border tribes. Though quite as unmilitary as the Bannermen, these troops yet serve some useful purposes as sedentary garrisons and local constabulary. In the province of Kwan-tung (Canton) there are about 70,000 of these troops in ordinary times.

Having few military duties to perform, their arms, which consist of swords, spears, matchlocks, and bows and arrows, are allowed to hang rusting on the barrack-walls, except on the days when custom requires the men to muster on the parade-ground. These periodical reviews are the only occasions on which they appear as a combined force. When active operations in the field become necessary they remain impassive, and are content to see the provincial militia, or "Braves," as these troops are commonly called, assume in their stead the pride and panoply of war.

The "Braves" generally clothe and arm themselves, according to their own fancy; and are distinguished by the character "robust," being stitched to their jackets in front, and the word "brave" behind. After the appearance of the Allied soldiers within the gates of Peking, and the burning of the Summer Palace, a field force was organised on the European system, and armed with European weapons. The title of *Shin-ki-ying* was given to this division. The name was borrowed from the history of the Ming dynasty, when, on the first introduction of fire-arms the designation of *Shin-ki*, or "divine mechanism," was attributed to the new engines of warfare. This force numbers some 18,000 or 20,000 men. The instruction of these troops is based upon the lessons given by English officers who went to Tientsin and Shanghai at the request of Prince Kung about the time of the

Taiping rebellion (1860). About this time a force, which was to earn for itself the name of the Ever-Victorious Army, had been organised by an American named Ward, to act against the Taipings.

Instead of shaving the head and wearing a pigtail, imposed by the Tartar usurpers, the Taipings wore the whole of their long black tresses uncut, plaited into a thick tail with cords of scarlet silk, and then wound round the head like a natural turban. Immensely wide petticoat-trousers, with a preponderance towards scarlet jackets and hoods, seemed the general style of the soldiers' dress. Buttons, knobs, Tartar hats, mandarin boots, and every article of Tartar wearing-apparel was most jealously excluded. The higher dignitaries and princes alone wore yellow, the Imperial colour.

As is well known, Gordon succeeded to the command of the Ever-Victorious Army, and with the small force of 5,000 rank and file, which constituted the bulk of them, overthrew large armies of the Taipings, and broke the back of the rebellion.

The extraordinary results thus obtained deepened the impression already made on the more enlightened Chinese statesmen, notably Li, and his great rival Tso Tsung-t'ang, the former of whom took immediate advantage of the capture of Nanking, in 1864, to establish his principal arsenal in that city. To the manufacture of arms he added the construction of ships of war, and subsequently a torpedo factory and school. The success which has hitherto invariably attended the employment of the drilled troops against the domestic enemies of China, has led to an extensive development of the new systems of arming and manœuvring. In many parts of the Empire, depôts have been established for training recruits in the new method. To the men thus disciplined are entrusted all the important points on the frontiers, and their ready capability of taking the field whenever emergencies arise, has almost entirely deprived the troops of the Eight Banners, the Green Standard, and the Braves, of all necessity for girding on their armour. On the line of the Amour 10,000 of these men stand as a protection against the northern neighbour of China, who, rightly or wrongly, is regarded as an encroaching Power, and 500 hold the pass of Kalgan, which separates China from Mongolia. In Manchuria a strong force occupies the principal garrisons; and from a memorial from the governor of that dependency, which appeared in the *Peking Gazette*, it appears that that official is fully alive to the value of rifles and *K'e-lu-pu* (Krupp) guns, which he is good enough to say are "manageable, strong, and effective weapons."

The number of drilled troops in different parts of the Empire cannot now be far short of 200,000 men; and behind these are

the Banner and Chinese forces, who, though badly armed and notoriously inefficient, yet possess, after all, a certain amount of training which could not fail to be of value in case they were called upon to join the higher organisation. No doubt in many places especially in Tientsin and Taku, the troops are maintained in a high state of training, and their arms are kept in good order. In some of the provinces in the interior where loyalty sits lightly on the consciences of the people, we find rifles exchanged for bows and arrows, and Krupp guns for venerable and useless ordnance.

The bow and arrow must have been a most inconvenient arm in actual war. Unless well made, and taken care of, the arrows could not be depended upon. The bow was easily damaged, and its string much affected by the weather. Moreover, the arrows were a bulky form of ammunition. Sixty cloth-yard shafts would make an awkward load, while the same number of the old-fashioned cartridges could be easily carried in a small pouch, and were much more easily kept in good condition. The introduction of the bayonet also gave the musket a great advantage over the bow; for while the latter was worse than useless, except for the discharge of its projectiles, the former, when not wanted as a fire-arm, became a formidable pike.

The authorities appear to be unconscious of the ridiculous contrast between their native system and the European organisation, for, with unblushing cynicism, they publish side by side, in the *Peking Gazette*, reports on the value of foreign arms, and the advantages reaped in the field from the steadiness imparted to the men by foreign drill, with the most grotesque accounts of the absurd evolutions and accomplishments of their native army.

Among the many shipments from New York and elsewhere, it is only too probable that a large percentage of the rifles are likely soon to require the gunsmith's help when roughly and carelessly used.

In October 1859 the Russians offered the Emperor of China 10,000 muskets; but His Majesty declined to accept the present, fearing that the muskets in question might be brought by an equal number of Russians.

The building of the Great Wall, the vast expense they were at in erecting it, and the enormous charge in keeping it up, are plain demonstrations of the Chinese want of courage. They are more fit to study, to trade, to make curiosities, and to cheat, than to fight.

The dress of the military varies in different provinces: blue-jackets bordered with red being worn in some, brown and yellow

in others; but sugar-loaf caps, terminated by a spear, and long tufts of scarlet hair, seem to be the proper distinction of a soldier. Cuirasses of quilted cloth, thickly studded with brass knobs, are worn in some districts; and shields of basket work, two feet long and painted to look like the heads of dragons, are used by a corps called the *Tigers of War*.

As before mentioned, the arms of the Chinese are swords, matchlocks, and bows, except when, acting as policemen, they exchange these for a more offensive weapon, and one with which they are more formidable—the whip. Macartney, writing in 1798, says that “no guns are fired in China by way of signal; but circular rimmed plates of copper, condensed by much hammering, and mixed with tin or zinc, to render it more sonorous, are struck by wooden mallets, and emit a noise almost deafening to those who are near it, and which is heard to a considerable distance. This instrument, which the Chinese call *loo*, and the English, in China, *gong*, from the name it bears in other parts of the East, is generally used upon the water. In like manner two pieces of wood struck together against each other, and producing a sound like that of a great rattle, serve ashore to give notice from authority, on most occasions, especially among the troops.

Drums do not seem to be used in the army; but they form a part of the religious music in the temples. Fans used to be carried by the soldiers together with their military arms.

The industry and never-ending perseverance of the Chinese enable them to build extensive and powerful batteries; their guns at the present day are in many instances equal to any of European manufacture.

General Gordon, in a memorandum presented in 1881 to Li Hung Chang, laid it down that “China should never engage in pitched battles,” and that “when an enemy comes up and breaks the walls of a city, the Chinese soldiers ought not to stay and fight,” but should devote their energies to harassing the enemies’ line of march. It is only charitable to suppose (if they were not incapable or unable to fight) that the commanders in the Tongking campaign acted in obedience to the above celebrated despatch.

But to return to China proper. With the field forces at Soochow Gatlings seem to be the favourite artillery weapons; but on this point there is no uniformity, and in some places guns of every kind and calibre are mixed up in a way which must be eminently perplexing to young gunners.

All the weapons of the troops of the Empire are carefully inspected at every review; and if any of them are found in the

least rusted, or otherwise in bad condition, the possessor is instantly punished: if a Chinese, with thirty or forty blows of a stick; or, if a Manchu, with as many lashes.

The best soldiers in China are procured from the three northern provinces. They march in a very tumultuous manner, but want neither skill nor agility in performing their different evolutions. They, in general, handle a sabre well, and shoot very dexterously with bows and arrows.

There are in China more than two thousand places of arms; and through the different provinces there are dispersed about three thousand towers or castles, all of them defended by garrisons. Soldiers continually mount guard there; and, on the first appearance of tumult, the nearest sentinel makes a signal from the top of the tower, by hoisting a flag in the day-time, or lighting a torch in the night, when the neighbouring garrisons immediately repair to the place where their presence is necessary.

An enemy invading China would have no difficulty in crossing the principal rivers, for the Celestials build capital bridges. The earliest constructed on the suspension principle is, probably, the iron chain bridge at Yunnan, which is supposed to have been built in the first century of the Christian era.

The sea-coasts of China are defended by 489 castles, and the number of royal hospitals is 1,145.

The viceroy or generalissimo of the Chinese army, whenever he is about to start on a warlike expedition, must worship his flag. Whenever he sends away with a detachment of soldiers any high military officer as his deputy to fight the enemy, and, generally, whenever any high military officer is about to proceed into battle, the flag of his division or brigade must be worshipped.

The worship is often performed on the public parade-ground. The viceroy sometimes chooses to sacrifice to the flag on his own private parade-ground connected with his *yamun*. The time selected is often about daybreak, or a little later. Oftentimes the high officials, both civil and military, connected with the Government, are present. It is necessary that all of the officers who are to accompany the expedition should not only witness the ceremony, but take a part in it. The same remark is true of the soldiers who are to be sent away or engage in the fight.

In the centre of the arena is placed a table, having upon it two candles, one censer, and several cups of wine. The candles are lighted at the proper time. Some officer, kneeling down, holds the large flag by means of its staff, near the table. The viceroy, or the officer who is to command the expedition, standing before the

table and the flag, receives three sticks of lighted incense from a professor of ceremony, which he reverently places in the censer arranged between the candles. He now kneels on the ground, and bows his head down three times. Some of the wine taken from the table is handed to him while on his knees, which he pours out on the ground. Then a cup of wine is dashed upon the flag, the professor of ceremony crying out, "Unfurl the flag! victory is obtained. The cavalry advancing, merit is perfected." The whole company of officers and soldiers, who had previously knelt down and bowed their heads in the prescribed manner, now simultaneously rise up with a shout, and commence their march at once for the scene of action, or their appointed rendezvous.

There are regular competitive examinations of candidates for military honours in China, conducted much after the same manner as the examinations for literary rank are conducted. Competitors for the first military degree, a military bachelorship, are examined by the same officials as are literary competitors, but candidates for the second military degree are examined by the provincial governor instead of special commissioners from Peking.

It seems strange to those who are accustomed to Western ideas that common civil officers, who know nothing about the practice of arms, should be deemed entirely competent in China to superintend military examinations, and decide in regard to the relative merits and attainments of the competitors. It seems also very strange that, in a land where the use of gunpowder has been known for centuries, no skill in the employment of guns and cannons should be required in candidates for military rank. Skill in archery and great physical strength are deemed of more importance than any other attainment relating to war.

Those who desire to compete for the first military degree are required to present themselves before the district magistrate of the district where they properly belong at the time he appoints. They must first have their names entered on the list of competitors by the clerk of a certain office connected with his *yamen*, in order to furnish the clerk with documents stating various particulars relating to themselves, which must be certified to by someone of the class of literary graduates of the first degree who are appointed to "act" as "securities" for candidates for the first literary degree. Without this security to their documents their names would not be recorded on the list of candidates, and they would not be allowed to enter the arena.

At the first examination before the district magistrate they are exercised in the practice of archery, standing; they are examined

in regard to their proficiency in shooting at a mark, each one shooting three arrows. At the second examination, before this official, they are exercised in the practice of archery on horseback. In like manner they are required to shoot three arrows at a mark, but while the horse is running. At the third examination they are all exercised with large swords, and with heavy stones, and with stiff bows. There are three kinds of swords which they are required to brandish ; one, it is said, weighs 100 pounds, the second 120 pounds, and the other 180 pounds.

The stones are also of three different sizes ; one weighs 100 pounds, another 120, and the other 160 pounds. These they are required to handle according to a certain rule. The bows they are exercised in bending are also of three different degrees of stiffness. It requires the expenditure of 100 pounds of strength to bend the smallest, 120 pounds of strength to bend the second size, and 160 pounds of strength to bend the third size. It is probable that, in fact, the strength necessary to bend the bows, to handle the stones, and to brandish the swords is considerably less than is indicated by the above figures, illustrating the difference between theory and practice, or between law and custom. No archery is exacted at the third session, but simply bending the bows, and manœuvring and practising with the swords and stones, each man by himself and for himself.

The names of the competitors who do not fail entirely, or come below the lowest standard of merit allowable, or violate some of the well-understood rules of the examination, are paraded on large sheets of paper, according to their relative attainments and worth, soon after the close of each session. It is customary for the literary chancellor to graduate the one who heads the list at the end of the third examination. A list of competitors is made out by the district magistrate at the close of his sessions for the literary chancellor to examine. At the proper time, these military competitors meet together at the rendezvous appointed by the prefect for the candidates of the different districts in his prefecture, where they pass through three sessions of examinations before him, in much the same order, and with the same kind of weapons or instruments as they have already passed through before their respective district magistrates. In like manner, the prefect causes a list to be made out of the candidates who have been examined before him, which he sends up to the literary chancellor. The head man on the list at the third examination before the prefect is also sure of graduation provided he does one tolerably well before the chancellor. The literary chancellor has also three sessions

before him, which are usually held at his *yamun*, or he may have them appointed on the parade ground, as he pleases. He can graduate as many of the first military degree for each prefecture as he can graduate of the first literary degree.

The military bachelors, with artificial flowers in their caps and with silk scarves wound round their shoulders, parade the streets with banners and with a band of music, in very much the same manner as do the literary bachelors after their graduation. A noticeable difference in the dress of the two classes is that the former always have round-toed boots, while the latter have square-toed boots. They are permitted to wear the button denoting their rank on their caps, but they have no pay and no employment as soldiers unless they enter the ranks of the soldiers. In such a case they have rations, and have the advantage over the common soldier of being able to compete for military employment as officers. Few of the graduates, however, enter the ranks as common soldiers.

The examination for the second degree, or Master of Arts, of the military bachelors of all the province, takes place at the provincial capital, under the supervision of the provincial governor as chief. He usually has four sessions. The first consists of shooting at a target with three arrows while standing on the ground. The second consists of shooting at a target with the same number of arrows from horseback while the horse is running. The third consists of archery on horseback. The target is three-sided, placed on the ground, and is called "the earth," or the "earthy ball." It is made out of leather, and measures about a foot across each of its sides. The fourth consists of an exercise with the three large swords, the three large stones, and the three large bows, much as in the lower examinations before they obtained their bachelorships.

The number of successful competitors for the second military degree for the province is only about sixty. These men engage with great show and pomp, having banners and music, in the custom of calling upon their friends, to honour them or to receive their congratulations, after they have paid their respects to the higher mandarins, whom law or custom makes it their duty to call upon soon after they have obtained a degree.

There is, doubtless, considerable bribery employed by the richer class of these military candidates, in order to secure a degree, and considerable favour shown at times by the examiners, but not nearly as much as in the case of literary competitors.

Those in the different provinces who have attained to the second military degree must go to Peking in order to compete for the third degree.

The successful competitors there are always sure of finding immediate employment in the army or navy somewhere in the Empire. The unsuccessful competitors, on their return to their own provinces, may, if they please, connect themselves with the body-guard of the provincial governor, and become a kind of personal attendant upon him. They have no regular salary while in this position. After following the governor for three years, they are entitled, according to law, to employment by the Government as military officers of the rank and title of a *chiliarch*, or colonel. In fact, however, it is affirmed, generally only those who are special favourites of the Governor, or who have money to spend in the shape of presents, *alias* bribes, succeed, even after the expiration of three years' attendance upon him, in becoming colonels. Those who use bribes need not wait the three years before they are appointed to a command.

Before drawing my paper to a close, I should mention that national conceit is a quality more highly developed among Chinamen than among any other people, and, though thoroughly aware of the superiority of the foreign organisation and arms, it not unfrequently happens that the mandarins shrink from publicly acknowledging it in the face of their countrymen. To such an absurd length is this paltry vanity carried that officers commanding drilled troops have been known to reserve the use of rifles for the enclosed barrack-yards, and to review their men in public armed with matchlocks, spears, and bows. A want of appreciation of the importance of being thoroughly well armed and prepared for an enemy can alone account for the existence of such folly, and it will require some very convincing home-thrusts before these national coxcombs will be brought frankly to admit that their continued existence as a nation depends on the thoroughness with which they adopt European arms and tactics. Professedly, they are fully alive to the value of an ever-ready standing army, but, unfortunately, their convictions never advance beyond the abstract stage of principle, and though, like every other principle, they surround this one with grandiloquent phrases—a Chinaman is nothing if he is not grandiloquent—they content themselves with the invention of such phrases, and leave the truths they embody to take care of themselves.

Naval Reform.

TRANSLATED FROM THE LATE MONS. GABRIEL CHARMES' "LA RÉFORME
DE LA MARINE."

By J. E. GORDON-CUMMING.

I.

TORPEDO-BOATS AND GUN-BOATS.

ARE we on the eve of a great change in the navy which will revolutionise all the sea-going instruments of warfare, and all naval administrative institutions? Not only in France, but in Europe, this question has, for the last few months, excited the utmost interest, and given rise to eager discussion.

During the years following the great calamities of 1870-71 nations seemed to have but one thought and one pre-occupation—strife on earth, Continental war—and they each consecrated all their best energies and resources to the organisation of numerous and powerful armies.

Little was thought about the navy. On the contrary (as in our case in 1872), under pretext that it now filled a less important place, and that its influence was weakened, the greatest sacrifices were forced upon it, in order to benefit the armies thought to be urgently required, against an enemy unable, it was asserted, to attack us at sea.

This was like the Athenians described by Demosthenes, who always put their hand over the wound just received, without perceiving that another was soon to follow. The revival of Colonial policy, and the taste for distant enterprise suddenly developed in France, was so opportune and natural that we have, little by little, seen all the European nations glide into the position we were the first to occupy, and this has gone far to arrest the course of ideas and bring back public attention to our long-neglected navy. The essential instrument in Colonial policy is the navy. But it is something else besides. The navy is one of the chief elements of national safety for a nation like France, with a great extent of coast to defend; its relations with Algiers, and its supremacy in the Mediterranean sea to maintain; and for a nation requiring to be

mistress of the sea if it is to secure arms and supplies from the other side of the ocean. If, whilst protecting our frontiers on land, we neglect our maritime frontiers, our want of foresight will risk cruel retribution.

It is, therefore, natural that after this temporary neglect in favour of the land forces, the navy should gradually become the object of general attention. Aroused by the progress of her rivals, England has begun to look with anxious eyes to what was once her powerful fleet, now powerless to resist the coalition of two unfriendly naval Powers.

Forced to empty her ports that she may sustain her pretensions in the Chinese seas, France has also perceived that her former superiority is no longer assured. Nations, younger and more apt to bend to progress, less encumbered by traditions and old-fashioned materials—Italy, Germany, and Russia—have entered the lists against the two former mistresses of the sea. Unhindered by old patterns and time-worn customs, they have profited by the latest movements, both in their trade and in their navy.

Italy possesses superb ironclads, excellent cruisers, and fine specimens of torpedo-boats. The German fleet is still insufficient, but 150 torpedo-boats are in course of construction at the present moment, and she will soon have a first-class *personnel*. Russia is organising a squadron in the Black Sea. Austria is developing more and more upon the Adriatic, in expectation of the day when she will have attained dominion on the Egean Sea.

On all sides maritime supremacy is aimed at. Nations that formerly possessed it seem now to be on the point of losing it, and what is so terrible for them is, that the weapon capable of destroying their power is within reach of the poorest and the weakest. We ask pardon if, at the outset of a study meant to be purely technical, we quote the fancy of an imaginative man in whom, as a heritage of his race, we know not what prophetic gift, what profound insight into the future, was allied to the most brilliant qualities of the novelist and the solid capacities of the statesman.

In the admirable and famous pamphlet which, in May 1871, under the name of the *Battle of Dorking*, reminded heedless England that the misfortunes which had overtaken France might one day be hers, nothing is more curious, nothing more instructive, than the sea-fight describing the Channel fleet sinking in the waves and carrying with it all that was great of the English nation.

“It was about 10 o'clock that the first telegram came; an hour later the wire announced that the admiral had signalled to form line of battle, and shortly afterwards that the order was given to

bear down on the enemy and engage. At 12 came the announcement, 'Fleet opened fire about three miles to leeward of us.' That is the ship with the cable. So far, all had been expectancy. Then came the first token of calamity: 'An ironclad has been blown up'; 'the enemy's torpedoes are doing great damage'; 'the flag-ship is laid aboard the enemy'; 'the flag-ship appears to be sinking'; 'the vice-admiral has signalled to'—there the cable became silent, and, as you know, we heard no more till two days afterwards. The solitary ironclad which escaped the disaster steamed into Portsmouth. Then the whole story came out—how our sailors, gallant as ever, had tried to close with the enemy; how the latter evaded the conflict at close quarters, and, sheering off, left behind them the fatal engines which sent our ships, one after the other, to the bottom; how all this happened almost in a few minutes. The Government, it appears, had received warnings of this invention; but to the nation this stunning blow was utterly unexpected."

Is this a romance of yesterday, this *Battle of Dorking*, written twelve years ago by a man that might well have been the last of the great English statesmen? Is it not, rather, a history of the future? Many signs point out that the reign of great ironclads is over, as well as that of the nations that place their confidence in them. We know how these squadrons are composed. Ever since the origin of an ironclad navy, constructors and naval men have constantly endeavoured to concentrate all their instruments of naval warfare upon a single ship—gun, ram, and torpedo—so as to have only one fighting unity armed with the most formidable offensive and defensive strength attainable. To the immense fleets of other days succeeded squadrons composed of few ships; but they were naval monsters—real floating fortresses capable of directing any fire, and also of resisting any fire directed against themselves. Far-seeing minds alone protested against what appeared to them a want of common-sense in a naval organization, that neglected the great law of Division of Labour and the necessities of modern progress. They pointed out how absurd it was, in days when all the seas are easily and rapidly accessible by steam, to constitute a navy of a few powerful but slow-going ships, both heavy and costly, which never would be where they were most wanted, and the loss of which would cause irreparable disaster.

For the price of one ordinary cruiser alone, ten war-ships could be obtained, much more rapidly constructed, much more rapidly worked, fit to get to any spot where their presence might be of some use. But these criticisms availed not in the development of

ironclads. Only one thing threatened it—the parallel progress in the size of guns. As fast as the engineers increased the force of resistance for ironclads, in like measure the artillerists increased the power of penetration by increasing the weight of the guns and the initial velocity of the projectile. The monster gun was the forced result of the monster ship. The latter grew even twice as fast as the former, from the fact that it had not only to resist it, but to carry it.

The result of all this was that the man-of-war inclined to become more and more a gigantic mass of iron and steel all but invulnerable, armed with gigantic artillery, possessing the greatest possible power of penetration, machines of enormous weight, a complication of numberless mechanisms, a very miracle of construction, but with the double disadvantage of costing at least some fifteen millions (of *francs*), and being incapable of storing a supply of coal adequate to the extension of its sphere of action in all parts of the seas.

As often happens in human affairs, a grain of sand was the means of arresting the naval giant and now threatens it with a speedy death. The appearance of torpedoes on the scene is no new thing; it is of far earlier date than the Battle of Dorking. One knows that the invention is contemporary with that of steamships, and that it is due to the genius of the same man—the illustrious and unfortunate Fulton. Until the American War of Secession this terrible engine of destruction had only been tried in isolated experiments. Some merely smiled at it, whilst others opposed it with invincible scepticism; and, further, the first disaster produced by torpedoes caused inexpressible surprise and pain. The Northern States had been the victims, and vented their indignation against the Southerners by treating them as assassins, unbelievers, wretches emanating from Hell. They spoke of torpedoes with equal anger and indignation. Infernal machinations of the enemy; assassination in its worse form; unchristian mode of warfare; . . . with similar expressions did they endeavour to wither their adversaries' invention. But, after having withered it, they did not hesitate to use it in their turn. Unchristian as it might be, the torpedo was at once received as one of the weapons of a Christian people. From that moment, and although ironclads were only then in their infancy, it could be told that their reign was over before it had begun.

“Up till now,” wrote the Prince de Joinville, “there exists no means of defence against this danger (the danger of the torpedo). In the first war it will threaten both big and little ships in every

direction. A well-placed ton of powder, a petard carried in a dark night by a resolute man, will suffice to send the whole naval force to the bottom, with all the millions represented by ships like the *Solferino* or the *Warrior*, including the hundreds of human beings who man them." This prediction would certainly have been realised if, since the War of Secession, there had occurred any great naval war. Wherever two navies have come into contact, the torpedo has played an important, if not a decisive part. In the war between Russia and Turkey, hardy Russian sailors blew up Turkish monitors by placing explosive torpedoes along their sides. In the war between Chili and Peru, a torpedo from the *Independencia* blew up the *Janequeo* in a few minutes; and if in 1870-71 France was unable to force the German ports and approach their shores, it was greatly due to her fear of the torpedoes sown in such profusion by the Germans that they themselves had the greatest difficulty in taking them up when peace was made, and moreover lost a hundred and thirty men when they tried to destroy them.

Redoubtable as the torpedo may have been along the coasts and in the rivers, it seemed until within the last few years as if squadrons in the open sea might not have much to fear from them. In fact our ironclads had been armed with what were called diverging torpedoes, arranged so as to be methodically kept at a distance, out of the wake of the ship. But these towing torpedoes required singularly delicate and hazardous manipulation. The officers affirmed that they caused great strain on the tow-ropes, and that only ten knots speed could be achieved with them unless at the risk of their being carried away. Moreover, the working of them was always difficult, and often inefficient. A great deal more confidence was placed in spar-torpedoes.

The history of these torpedoes is certainly most glorious. It has been illustrated by American sailors and by Russian. But the most brilliant feat it has recorded is, without doubt, that of the two small torpedo-boats of the 45 and 46 pattern at Fow-choow. They fought in full daylight under the double fire of the Chinese and of the French ships, the latter firing with all their might on the Chinese squadron. In the face of these difficulties and dangers they blew up a transport and seriously injured a despatch vessel. Sufficient justice has not been awarded to this act of intrepidity, which certainly far outstrips the Canary exploits. These took place during the night, as did those of the American and Russian torpedo-boats on occasions when they attacked ships in repose, whereas the torpedo-boats 45 and 46 were in full day-

light and between two fires. Simple sloops armed with torpedoes renewed the same exploit at Shei-poo.

But, however admirable may be the heroism of our brave sailors, it is evident that an arm that has itself to be placed against a ship to destroy it could not possibly be taken into common use, or be considered reliable, not to say decisive. The spar-torpedo, like the diverging torpedo, was a formidable menace to the ironclad, not a certain danger. It was possible to provide against it, and the assailant braved such fearful perils that it inevitably must sometimes come to grief. But as these perils lessened in proportion as the speed increased, the dimensions of torpedo-boats were next restricted, and attention turned to the construction of a diminutive and very fast boat; a problem considered unsolved by most engineers. Mr. Thorneycroft had, however, the merit of solving it. The celebrated *Miranda* became the prototype of the first torpedo-boats, appropriately known as "Thorneycrofts." Thus the torpedo-boat was invented; but it was, as yet, incompletely armed.

It was only possible to use the spar-torpedo as a hand weapon; therefore the throwing weapon, the projectile-torpedo, had to be created. Although various experiments were made towards this end, Mr. Whitehead stands hitherto alone in having achieved a practical result. His torpedo is a regular little submarine boat, of cigar shape, varying in length and breadth. It proceeds at a constant depth, and carries a charge of gun-cotton in its head, which is exploded by percussion on contact. The machinery sets two screws in motion; the motive power being compressed air, carried in a strong reservoir placed in the central part of the torpedo. Two special appliances, one a hydrostatic piston and the other a pendulum, keep the torpedo horizontal, and at the required depth, generally about three *mètres*. When it deviates from its proper depth, the hydrostatic piston brings it back, by acting on a rudder placed at the stern; and the pendulum, acting on the same rudder, maintains the horizontal position of the torpedo during its course. The speed of the Whitehead torpedo is about twelve *mètres* a second, during the first 400 *mètres* of its voyage. We shall see later on that it has accomplished greater distances without deviating, but it is prudent not to fire at the object at more than 400 *mètres*.

It can be discharged above or under water. The latter method is more generally employed. The torpedo is placed in a tube, which is, in fact, a special sort of gun, having the torpedo as its projectile. The torpedo-boat manœuvres so as to point the axis

of the tube in the direction the torpedo is to take, and when within range, the torpedo is discharged. A sort of key placed in the middle of the tube opens the air chamber, the engine begins to move, the torpedo assumes its proper depth, and continues its course until it encounters the vessel against which it explodes. Our ironclads have been supplied with locomotive torpedo-boats, but this terrible weapon is naturally more efficacious on a "Thornycroft," which has great speed and can get sufficiently near the enemy to sink it with certainty.

Thanks to the tendency of modern artillery, ironclads are kept at a great distance from each other. The "Thornycroft" torpedo-boat, trusting to its speed and small size to obviate all danger, resolutely advances against the giant adversary it is going to fight. A torpedo-boat carrying a locomotive torpedo may be classed, as has been justly said, with a spar-torpedo-boat 300 *mètres* long. If spar-torpedo-boats have already done so much damage, what will be the effect of torpedo-boats furnished with automatic torpedoes? Nevertheless, a great number of naval men remain as yet unconvinced that this new fighting ship is to destroy ironclads; they do not even believe it to be very dangerous. They hold that the locomotive torpedo is an extremely delicate weapon, disarranged by the least thing; deteriorating with extraordinary facility; risking the betrayal of all the hopes that have been placed in it at the height of battle. As to the torpedo-boat itself, its navigating qualities have long been doubted, and still continue to be doubted. It is granted, perhaps, that it may be of some use on the coast, or close to land; but that this diminutive boat, this "nutshell," as it is called by M. Gougeard, should venture on the open and stormy sea in the pursuit of a squadron, is what many officers, perhaps ultra-faithful to old traditions if not routine, refuse to admit. They treat the adherents of torpedoes and torpedo-boats as visionary. They affirm, at least, that the worth of the weapon and the boat destined to its use, has still to be proved; that decisive proof must be adduced, and that, in any case, changes between the past and future system must come by degrees.

We are going to examine into the justice of their assertions, or, rather, by the example of our own manœuvres and those of foreign fleets, we are going to refute the objections they advance against those who, like Admiral Jurien de la Gravière, long before the invention of torpedoes, predicted the advent of large fleets, which should succeed the cumbrous and small squadrons of the present day.

II.

To show how ill-founded are the criticisms levelled at the locomotive torpedo as a weapon of warfare, it is necessary briefly to recapitulate the transformations it has gone through. The last of these are so recent that it is not astonishing if they are scarcely known even in the navy. It was towards the year 1872 that the idea of a locomotive torpedo was first mooted; to carry an explosive charge to a proper depth, under the bilge of a ship. Keel-torpedoes were made; they were feebly charged and could only go at a moderate speed. They went very badly and possessed none of the qualities requisite in practical use; nevertheless the problem was virtually solved. This first attempt was gradually improved.

As far back as 1876 Mr. Whitehead sold a locomotive torpedo to the European Powers, and it went as well under water as above it, and was equally endowed with sufficient speed. Thus, from this period only, did the locomotive torpedo earn the right to interest the naval and political world.

At first an attempt was made to discharge the new weapon from what were called shell-tubes, placed under water, and the results were satisfactory; but when it came to putting these shell-tubes on board a vessel, and to discharging these torpedoes when under weigh, almost insurmountable difficulties were encountered, arising from the speed itself; therefore the idea of firing the torpedoes on the surface of the water came into vogue.

Not being constructed for this purpose, the Whitehead torpedo gave very unsatisfactory results, and, as numerous accidents happened, a remedy had to be found. Mr. Whitehead thought at first he should succeed by making smaller torpedoes, and gave them 4^m 40 in length, instead of 5^m 80.

The model torpedo of 1877 was of this pattern. Thus modified, the new torpedo was very little superior to that of 1876. But other and more important modifications were to be foreseen, and, as long ago as 1878, the French Government ordered a hundred torpedoes of superior strength and dimensions to be turned out with all haste at Indret.

The French torpedo of 1878 was a real advance. Justice was never done to the engineer charged with its construction. At this moment a slight modification of the stern is being introduced at a trifling cost, and it is becoming an excellent weapon.

The improvements introduced in 1878 were unfortunately insufficient, so that when Mr. Whitehead offered us the 1880 pattern,

it appeared to be far superior, and all the world approved of it. The manufactory at Indret was beaten out of the field and suppressed, and we were reduced to buying our torpedoes in Austria. In passing we may remark that this is a very serious matter, for, in time of war, we shall be unable to procure the torpedoes we require for our ships from other countries, and we shall risk finding ourselves without arms when we come to face some enemy in possession of everything it requires. However this may be, the pattern 1880 was the first really to give satisfaction when discharged above water. As soon as it appeared, those officers who knew the previous models, and had watched the transformations of the torpedo with interest, begged that it should be tried not on stationary ships against stationary marks, as had been hitherto done, but on vessels in motion, firing at objects also in motion. These first attempts to fire at various angles were not successful, the deviations of the torpedo being very irregular. It would appear that in France people were at once discouraged. After carefully studying the problem in 1881, the Danes constructed a special tube, called a shovel tube, which obtained a remarkable success. Ignorant of these Danish successes, or else disgusted with their own experiments, the French did nothing further for torpedoes: they contented themselves by preserving them, more or less carefully, in the magazine; and the arrival of Admiral Du Petit Thonars, a most distinguished officer, was needed to bring a forgotten question once more into notice at Toulon.

In the beginning of the year 1883 Admiral Du Petit Thonars made the movable defence force do a great deal of firing at Toulon, on stationary objects as well as others in motion. It was through his influence that the transport *Le Japon* was kept armed, and has become, in a way, permanently commissioned for experiments, whilst, at the same time, an excellent school of engineers for the Whitehead torpedoes. From that moment fresh attempts were made; a shovel-tube of the Danish pattern was asked for; in less than a year considerable progress was achieved. Perhaps Admiral Peyron, who was at the head of the Admiralty in the Ferry Cabinet, but was, at the time we speak of, Maritime Prefect at Toulon, and to whom, later on, all this progress was a dead letter, might remember being taken on board *Le Japon* by one of the torpedo-boats belonging to the movable defence force, and being surprised at the firing whilst under weigh off the Isles of Hyères, had he not drunk of those waters of forgetfulness which, according to Admiral Jurien de la Gra-

vière, flow round the foundations of the Palace in the Rue Royale. And perhaps his faulty memory might have been refreshed by the documents in his office, as to the amount of firing executed under his eyes, both by the movable defence force and on board the *Japon*, if official documents had ever served to refresh the faulty memory of ministers. It was in the presence of Admiral Peyron that torpedo-boats effected firing, whilst under weigh, with entire success on moving objects, and that at 700 *mètres* distance. Since that date the placing of locomotive torpedoes has made great progress, but of this the greater part of our navy is unfortunately unaware. The superior and general officers remain satisfied with the experiments tried with the first and still incomplete patterns, those of 1876, 1877, and 1878 ; they do not believe in the results obtained with the new 1880 pattern, and with the shovel-tube. Their position is taken up, and their judgment passed. They decline to come and see the firing of the present day ; they do not even deign to take any notice of it. If questioned in political circles, they reply that the torpedo is still in its infancy, that it cannot be reckoned upon, and should still less be taken into consideration. They expend all their faith upon ironclads and enormous guns, the progress of which they watched in the bygone days of their youth or manhood. Every question having reference to the torpedo is repulsed by them with irony or *ennui*. The result is that we possess neither the *personnel* nor *matériel* necessary towards the employment of the terrible weapon our neighbours are studying and developing before we do.

The *Japon* is almost the only vessel upon which the locomotive torpedo may be said to have become really practical. It makes about 200 experiments every month, and never loses a torpedo. If they are lost in other places it is, therefore, from want of practice on the part of the officers and men. Even in the squadron, the little firing attempted is without any definite aim or object. This inaction produces inaptitude, and at every check the fault of the operators is laid on the instrument. But the firing on the *Japon* is done with entire success, whether at anchor or under weigh, in fine or bad weather, at a fixed mark, or the reverse. In its recent firing, whilst under weigh, at a moving object, the deviations from the mark were so slight that it may be asserted that 95 times per cent. a vessel 70 *mètres* long would have been hit at distances varying between 250 and 400 *mètres*. People may therefore leave off telling us that the torpedo is not a weapon to be depended upon. In the hands of a *personnel* trained and taught like that of the *Japon*, it possesses admirable precision ; and this may be

attained on any vessel going through similar training. But it is asserted that, although the Whitehead torpedo may be precise, its extreme delicacy will only permit its use when infinite care is taken; that the least thing would disarrange its marvellously complicated mechanism; and that this masterpiece of clock-making could not withstand all the chances of war and distant travel.

Two facts which took place this very year prove the extent of this fallacy. The only vessel in our Chinese Squadron possessing Whitehead torpedoes is the ironclad *La Triomphante*. This vessel left France two years ago. It possesses two discharging tubes and eight locomotive torpedoes; it has, as a special staff, a torpedo officer and two Whitehead mechanics. From time to time it discharges torpedoes for practice, and they are in as perfect condition as when they started.*

The very day of the Langson surprise, Li-Hung-Chang went on board this ironclad, just then anchored at Chefoo. After showing him the artillery on board, and the rest of the military equipment, the commander proposed that he should witness some firing with Whitehead torpedoes. The discharging tube was pointed at 80 *mètres* ahead of the Volta, distant 300 *mètres*; the torpedo was then discharged, and, to the great astonishment of the Petcheli Viceroy, it went perfectly straight to the spot designated. It is a matter of great regret that the dimensions of the *Triomphante* prevented her arriving in time for the battle of Foochoow; she might probably have sunk a Chinese vessel with one of her torpedoes, discharged at 300 *mètres* distance.

The second fact, not less striking than the first, occurred during the Russian manœuvres. The cruiser *Afrika* was anchored ahead of a buoy, and her broadside brought to bear on the widest side of the Bjorkosund Channel, so as to be in position for its guns to repulse an eventual attack by torpedo-boats, when a fishing-smack from among the dozens assembled came up to her from ahead, and exploded a torpedo under her bows. The cruiser was immediately considered to be disabled. It was then found that the opposing force had hired this boat and manned it with disguised officers and sailors, who had discharged the torpedo. So that this implement of warfare, considered to be so fragile and delicate, was put on a little fishing-boat by the Russians and kept there several days.

* When a torpedo is discharged, if the aim is faulty, a special mechanism makes it sink to the bottom of the sea. The torpedo possesses another special mechanism, which, instead of making it sink, brings it to the surface, where it can easily be recovered; so that the same torpedo may serve an indefinite period for practice—a useful precaution, as they are very expensive.

Its discharge was aided by chance, and its success was none the less decisive.

The worth of locomotive torpedoes as weapons of warfare has therefore been proved. But, as we have already said, so long as they had to be placed on ironclads, compelled to keep out of the range of their own artillery in battle, their use or even their efficiency might well be doubted; and it might be advanced that their use should be restricted, or secondary. Placed on Thorneycrofts, they would be terrible at the mouths of harbours and on the coasts. On the open sea they were not so dangerous, and their effect might still be doubtful.

This illusion, or rather this hope, could be cherished up to the month of April 1884, at which period autonomous torpedo-boats, capable of facing the roughest seas and making long voyages on them, made their appearance in our squadron.

These torpedo-boats were not the first to come out victorious from a similar trial. Those constructed by English firms, either for Greece or the South American States, had gone alone to their destination without escort and without accident, although not without encountering storms.

The two torpedo-boats possessed by our squadron, patterns 63 and 64, the work of M. Normand, our cleverest constructor, came alone, under similar conditions and with equal success, from Brest to Toulon. But experiments that were unpublished could not influence opinion.

The brilliant exploit of the torpedo-boats 63 and 64, on the 14th April 1884, had quite a different effect. The squadron had started in the morning in a violent easterly gale. As soon as it had left the shelter of the coast the breeze freshened, and at the entry of the Hyères harbour the wind rose with great force. The sea became so rough that the two plated coast-guard ships *Le Vengeur* and *Le Tonnerre* were quite unable to follow the ironclads; the first was obliged to seek shelter under the Bregançon Fort, and the second had to proceed on her own course.

Far from imitating this example, the two torpedo-boats showed extraordinary steadiness in their course; they not only followed the squadron at a speed of ten knots, but when it slackened to eight knots were obliged to pass it, as their engines could not be restricted to that speed.

A considerable sensation was created by this behaviour of two vessels of 33 mètres and 45 tons; we may say that the fame of it resounded throughout all Europe, and that it gave the initiative to further experiments instituted without delay by all the other

maritime nations. From that date it was no longer doubtful that the problem of fast navigation on relatively minute boats was solved.

These essays in navigation were pursued, and the torpedo-boats 63 and 64 remained with the squadron. They accompanied it to Corsica, Algiers, Tunis, Morocco, and Corfu, and went across the whole western basin of the Mediterranean with it. Although they were so small, and so little above water, they enjoyed complete security, and never suffered any serious loss, even in bad weather or bad seas.

Of course, in protracted gales (the longest never last more than four or five days), some precautions were necessary, and they had to be handled with care; but this must be done with every ship, and big ironclads are alone exempt from this. Their machines proved to be excellent, and only met with one difficulty—that of conforming to the normal speed of a squadron. Their slowest pace is eight to nine knots. But this is only another advantage, for in attacking squadrons, torpedo-boats ought to possess the greater speed. Speed and agility are precisely the conditions for their success.

The sea-going properties of torpedo-boats have, therefore, been completely proved. Their worth, from a military point of view, still remains to be seen. But many naval men assert that, small though they be, torpedo-boats would never escape the vigilance of ironclads, as they could be distinguished at a great distance, and would certainly be sunk before reaching them.

Ironclads are armed with special guns; Hotchkiss, Nordenfeldt, &c. They are very light, and are placed in the tops and all along the ship's sides, whence they can open fire on all assailants. But this means of protection is much less certain than is imagined, and it could only be used if the torpedo-boats were seen when far enough off to be kept for some minutes under fire by the ironclads.

Thanks to their speed, the torpedo-boats can advance with lightning rapidity, and if only perceived at a distance of a few hundred *mètres*, nothing could stand any chance against them. The danger is less imminent in daylight, when, unless there is a fog or the smoke of battle envelopes the ship, the eye can sweep the whole circle of the horizon without intermission.

The ironclad is provided with two electric lamps, and they cast their rays far over the sea. But these rays only light up one spot at a time; all the rest is plunged in shadow, made all the deeper by the contrast. If the ironclad is attacked by several torpedo-

boats, it may be able to sink one or two that it has sighted by means of this electric light ; but whilst conducting operations it would probably be blown up itself by the others. Moreover, everyone knows how a constant and active watch exhausts a naval *personnel*, especially when its cause of anxiety is the gravest peril.

An ironclad pursued by torpedo-boats is condemned to an incessant watch, enough to demoralise the most veteran crew. The machines themselves suffer from this perpetual strain ; the electric lamps have always to be kept alight, always to be in motion, and become worn out in this forced service. At first, both men and instruments are perfectly ready and in good condition, and are, therefore, proof against any surprises. But in the long run, fatigue, uncertainty, and sustained effort produce unavoidable consequences. A few seconds of lassitude and forgetfulness, on the part of the sailors or officers of the watch, suffice. Some mechanism may go out of order, a luminous ray may go out or deviate, and horrible disasters result.

These are not purely theoretical arguments and inductions devoid of truth. At night the result is certain. Big vessels of moderate speed have been attacked by torpedo-boats in our own experiments as well as in those of certain foreign squadrons. Everywhere the result has been the same. Everywhere the dwarf has killed the giant. Everywhere the big ship has been reached by the destroyer, and been unable to resist it. The movable defence force at Toulon was the first to attempt these experiments in warfare. Watchful as the ships might be, and forewarned as they were of the intended attack by the torpedo-boats, and supplied with powerful electric lights, the torpedo-boats had invariably the advantage over them. One or more of the assailants was always able to get near enough to the vessels they were attacking, and to discharge the torpedoes with unerring aim before there was time to signal their presence.

We will not recount the details of these experiments worked under the enlightened direction of Admiral Du Petit-Thonars. We limit ourselves to recalling what was accomplished later on by our evolutionary squadron, wherein Admirals Jaurès and Aube took the initiative. Quite as great an impression was made by the attack upon this squadron, off the coast of Algiers with the two torpedo-boats 68 and 64, as by that undertaken with the same boats in the heavy gales off the islands of Hyères.

It may not, however, have been noticed how essentially favourable to the ironclads all the conditions were of this attack.

It is generally admitted that at least three torpedo-boats (thirty-nine men and 600,000 *francs*) are required to combat one ironclad with any chance of success (700 men and twenty million *francs*).

Now, in the experiments to which we have alluded, two torpedo-boats had to fight against six ironclads, warned as to the time of attack, and favoured by specially brilliant moonlight for the lock-out.

It is quite certain that in time of war the moment of attack can never be known, and that the assailants will almost always choose a dark and sombre night, so as to be less easily discovered by the electric light, the rays of which are to a great extent absorbed by the vapour of the damp atmosphere.

Therefore the squadron had altogether exceptional advantages, which ought to have insured its success.

Nevertheless, although the torpedo-boats had to face every obstacle, although twelve electric rays were employed to discover them, it was only at a distance of 1,200 *mètres*, that is to say about seventy seconds before the right moment for discharging their torpedoes, that they were perceived by the flagship *Richelieu*.

The alarm had scarcely been given before the torpedo-boats were upon the squadron, and it is surely not too much to assert that in a serious attack one at least of these vessels would have been disabled.

Whatever effect may have been produced by such decisive experiments, they failed to disarm the opponents of torpedoes and torpedo-boats in France. Care was taken not to renew them in the squadron, for fear that the result might again be in favour of the engine and boat against which there is such inveterate prejudice.*

Germany, Austria, and Russia are eager in the use of the torpedo. England and France, on the contrary, do everything they can to hinder its progress. It is as if the two great maritime nations of Europe knew by instinct that this great naval revolution is preparing danger for them.

"Pitt is the greatest idiot in the world," said Admiral St. Vincent when the first torpedoes invented by Fulton were favourably considered by the English statesman. "Pitt is the greatest idiot in the world if he encourages a system of warfare that would be useless to those who are masters of the sea, and which, if it succeeds, will deprive them of that supremacy."

* A new experiment was, however, tried last spring. Three torpedo-boats attacked the squadron with complete success. But silence was maintained as to this fresh proof, even more decisive than the first.

This argument might hold good in 1805, it was even prudent; but, now that the discovery is in universal use, it would be no less a folly to ignore it than it would formerly have been to encourage it when as yet unknown and of no weight.

England and France are on the wrong tack. Instead of accepting the inevitable, instead of recognising that the past is gone, and that the conditions of naval supremacy are altered; instead of submitting their war-ships to the necessary alterations, they prefer to shut their eyes and deny evidence. Heaven grant they may not be cruelly punished for this. Faithful to worn-out traditions, these are the sole nations that keep a squadron armed all the year round, fondly imagining that this will insure their superiority over their rivals.

The Austrians, Germans, and Italians go to work quite differently. Persuaded that squadrons armed throughout the winter cost a great deal, do little service and execute very few manœuvres, they prefer to arm their ironclads only during a limited period of the summer. To make up for this, they are not satisfied with putting three or four ships on the water, but, concentrating all their available force on the sea, they execute endless manœuvres, and thus train a considerable body of men to maritime life.

During the summer of 1884 the Italians mobilised almost all their torpedo-boats; and the Austrians, with a budget of only thirty millions, whereas ours reaches nearly two hundred millions (*francs*), armed six ironclads, six torpedo-boats, and three despatch-boats, and executed manœuvres with them we should not have dared to undertake with our squadron. They separated their fifteen boats into two divisions, each comprising three ironclads, a despatch-boat, and three torpedo-boats; the admiral's ship remaining neutral. These two divisions, after exercising together, simulated a squadron fight. They advanced towards each other, each ironclad having a torpedo-boat on either beam. When at a suitable distance, the artillery opened fire, the vessels disappeared in the smoke, and the torpedo-boats then seized the opportunity to dash into the fight. No sooner were they perceived than they were met by the fire of guns and musketry from the tops; but very often they were only perceived after the torpedoes were already placed.

These manœuvres comprised 800 shots discharged as much from the ironclads as from the torpedo-boats; the latter further effected a dozen night-attacks under entirely various conditions. Sometimes the squadron was anchored, and defended itself; at other times it was in motion, taking to flight before the torpedo-boats, and endeavouring to annihilate them with its fire.

The results furnished by this campaign were very remarkable ; nine times out of ten the torpedo-boats succeeded in their attacks, and probably they have thence derived rules of naval strategy of which we may be entirely ignorant—for the military representative despatched from Vienna to assist at these experiments was a lieutenant-colonel in the cavalry.

The Russian manoeuvres were even better than the Austrian. Last year they mobilised all their vessels on the Baltic and divided them into two squadrons. The vice-admiral in charge of the torpedo-boats took the command of one, and the other was under the admiral in command of the artillery. These two squadrons were disposed on a given day, at a distance of sixty miles from each other, and thence began a perfect little war: a war of reconnaissances ; a war of torpedoes ; attacks by day, attacks by night, an attack on the ports and fortifications by one of the fleets ; everything was tried.

The arbitrators to judge the firing had been chosen by the Ministry, and were distributed over the various ships. Unfortunately we possess very scanty information as to these important manoeuvres, in which guns were so favourably tested against torpedoes. We only know that from the very beginning of the operations the iron-clad frigate *Wladimir-Monomach* was suddenly confronted by the enemy, and attacked with such vigour by its torpedo-boats that she hardly had time to open fire before they were upon her.

Later on a general attack by the opposing torpedo-boats and the spar-torpedo-boats on the Tschichatschef division anchored in the Transmund roads, was again entirely successful. The torpedo-boats were recognised, and the whole force of the artillery was directed against them.

Meanwhile, the spar-torpedo-boats came down unnoticed upon the ships of the division. Protected by the fog and the clouds of smoke, they approached first one and then another of the ships, placed their torpedoes, and then fled in an opposite direction. Towards the end it was no longer a battle, but a massacre of ships.

Being quite unable to reach the spar-torpedo-boats, the torpedo-boats under Admiral Tschichatschef endeavoured in vain to repulse them. In the opinion of every onlooker, three-quarters of the squadron would have been destroyed ; its situation would have been most dangerous, as it was constantly enveloped in fog and smoke.

In another manoeuvre, the frigate *Swietlana*, the strongest in the squadron, and protected, moreover, by defensive outrigger torpedoes, was destroyed by three torpedo-boats.

The ironclads *Kreml* and *Perwenec* were equally sunk. Finally, the monitor *Carodejka*, and the despatch-boat *Zemcug*, came upon the torpedo-boats as they passed the batteries at Cronstadt with the squadron, and were considered as destroyed.

And, lastly, two torpedo-boats were sent against an old gun-boat, the *Ossetr*, and discharged Whitehead torpedoes at it. The first torpedo struck the *Ossetr* aft, and, bursting, sent up a column of water and wrecked wood. A second hit the still floating bulk, and entirely destroyed it. Thus, it is evident that we may draw the same conclusions from the Russian manœuvres as from the Austrian.*

Russia has entire confidence in torpedo-boats and in torpedoes. She already possesses more than a hundred torpedo-boats of the first class, and indefatigably continues to construct others.

But we must specially give our attention to the German experiments. For several years Germany seems to have conceived the idea of placing her naval strength on a par with her military force. At first she took the usual method, and constructed more or less indifferent ironclads, which more or less disappointed her. But she soon changed her tactics. In view of the indecision now subsisting as to the future instruments of naval warfare, she speedily comprehended that it was of the first importance to get together an excellent *personnel*, and to procure the greatest possible number of these inexpensive torpedo-boats, destined, whatever happens, to play a foremost part in the future. Giving up expensive constructions, she set to work under General Caprivi, the Naval Minister, who appears to be a very able man, and employed the same means in the organisation of her naval force as those whereby she formed her incomparable force on land. She increased the number of her crews, and gave them a complete course of instruction. In 1884 she mobilised her whole available *matériel*, and went through very important manœuvres at three different spots on the Baltic and the North Sea. "In a few years," an English journal, the *Army and Navy Gazette*, justly observes, "Germany will be able to take the lead in a naval coalition in any part of the world whatsoever. She continues to increase the number of her torpedo-boats and to improve their quality. She is evidently ambitious of naval power. The tenacity she shows towards the attainment of it is a certain pledge of her success. Extreme care is given to instruction and to the equipment of her ships. The remarkable

* Since these lines were written, a complete account of the Russian manœuvres has been given by *The Yacht*, in its June numbers. They were even more decisive than we have stated above.

manœuvres executed by her fleet are a lesson and a warning to England."

This lesson is not only for England; we cannot sufficiently take it to heart ourselves. Germany has, perhaps, studied the offensive and defensive rôle of torpedoes and torpedo-boats more than any other Power. Her manœuvres have proved that the use of these engines and boats would make it almost impossible for a squadron to effect a bombardment.

One of our admirals, Admiral Aube, had already asserted this fact, but it was placed beyond dispute by a feigned attack on Dantzig, undertaken by the German squadron. The squadron was rapidly enveloped by the smoke; the volume and density of this smoke naturally increased in proportion to the quantity of powder used by the huge artillery on the ironclads and the coast batteries, which proves that, the more formidable the artillery, so much the more favourable to the torpedo are the conditions of attack. At times the ships were so completely concealed by the smoke that the gunners of the batteries had only the flashes of the enemy's fire to assist them in taking aim.

One can understand how easy it is for a torpedo-boat to profit by this darkness, and to approach and blow up an ironclad. This is only one, but one very instructive instance of the German manœuvres. The *Gazette de Voss* sums up the general lessons which have flowed from them:—

"Not only were the ironclads provided with the apparatus for explosive torpedoes; but a special division of torpedo-boats was attached to the squadron at the end of July, and later on another set of experiments were added that the new torpedo-boats might be tried. The result of these trials has confirmed the value of this submarine engine for the defence of the German shores. The idea of placing one or two torpedo-boats alongside of each ironclad seems to be finally given up. It is found preferable to build torpedo-boats of larger dimensions, so as to render them thoroughly sea-going and to link them to the squadron ironclad as a sort of floating appendix.

"This year's experiments here proved that enormous ironclads can be sunk by the simple explosion of a torpedo. Even in the brightest moonlight, and notwithstanding the utmost vigilance, no ship is safe from attacks that may be directed against her, especially if at anchor and exposed on a coast abundantly supplied with torpedo-boats. Even if moving, the blockading ships would not be in safety, seeing that the torpedo-boats can follow them and recognise their prey by the lights, which the enemy has great diffi-

culty in covering if moving along with the squadron. If the ship is hit in her water-tight compartments, she may be considered as disabled, by the single fact that she thereby loses the power of evolution.

"The increase of strength for the ironclad, carried out by the recommendations of the English admiral Symonds, would not obviate that result. As far as we can at present judge, there are no means of protecting even the most perfect and powerful fighting ships against the destructive effects of torpedo-boats. An attempt has been made to keep watch over the squadron ironclads, by means of guardships placed at a distance of 500 *mètres* from them; but experience has proved that even in the brightest moonlight, and supposing the crew to be as wide awake as in the daytime, it is impossible to ensure the security of the threatened vessel.

"The idea was started to surround ships at anchor with a sort of submarine girdle of metallic network, but this gave only very unpractical results; seeing that if the boat thus protected were to be attacked, it would be unable to move, and would therefore lose all means of defence. As to the torpedo-boats, they are difficult to hit, and have the advantage over large vessels that when the torpedo is exploded they can be easily steered so as to avoid the concussion.

"Nevertheless, it is only advisable to employ them if they can surprise the enemy either when favoured by the darkness of night, a fog, the smoke from the firing, or if they can suddenly appear from ambush. In what especially relates to the torpedoes themselves, it has been found, in the experiments made of different systems, that the German Navy alone possesses the most murderous engines of this nature. It employs a torpedo invented by an Austrian naval officer; the secret of the invention was bought by the Admiralty at the price of 225,000 *francs*, and the German Navy itself undertakes its development. This torpedo has at the present moment attained such a degree of perfection that it constitutes one of the marvels of modern times."

This shows us the extent of German enthusiasm for the torpedo; their chief end is, moreover, to possess the greatest possible number of torpedo-boats. Last year seventy were constructed and this year the number came up to 150. Austria imitates the German example; the Naval Minister asked and obtained a credit of 1,778,000 florins from the delegates, as a first instalment for the construction of a fleet of sixty-four torpedo-boats of the three different kinds—torpedo-boats for direct attack, scout torpedo-boats, and those for the open sea destined to bear the brunt of the battle.

Germany has only one ironclad in the stocks ; Austria is giving up their construction entirely, and contents herself with getting other despatch-vessels ready. It will be seen that the lessons derived from these manœuvres are not lost upon the Allied Empires. It is said that they are inspired by the one spirit, or, rather, that it was through German instigation that Austria undertook her successful experiments in 1884. In case of a common war the two navies are to be organised on one system. England and France are, therefore, alone in their opposition to the general movement. England has, however, ceased to hold out more than a feeble opposition. The manœuvres of the Channel Fleet silenced the most determined opponents of the torpedo. A clever officer, escaping observation, led a fleet of torpedo-boats to within less than 400 *mètres* of the vessel to be attacked, although it defended itself as best it could by its electric lights.

In another experiment the confusion was such that the watch fired on ordinary boats filled with excursionists, thus showing how difficult it would be for an ironclad in the confusion of battle to distinguish friendly torpedo-boats from those of the enemy, and only to hit the latter.

The new English constructions include a number of torpedo-boats ; and Lord Northbrook declared, in a recent discussion, that if England continued to build ironclads, it must be that she was rich enough to incur military expenditure which probably would be useless.

France is, therefore, alone in altogether denying evidence. She is so proud of the ironclads that are not afloat, but are still in the stocks, that she has only ordered seven more torpedo-boats this year of the same pattern from the clever constructor of patterns 68 and 64.*

* The *Temps* announces, in its number of the 22nd June 1885, that the French have ordered thirty-four first-class torpedo-boats from the trade. This news appears true ; but we must, nevertheless, show that the description of our future torpedo-boats is not correct as given by *Le Temps*. They will not be overloaded by an equipment of spar-torpedoes, to the detriment of speed or coaling, and they will not discharge torpedoes of 4^m 40, as upon the torpedo-boat of pattern 68, on which the tubes are not high enough above water. These torpedoes are entirely inferior to the 5^m 95 torpedo, and the gun-cotton used with them is quite insufficient.

(To be continued.)

The Attack Formation for Infantry.

By Capt. F. N. MAUDE, R.E.

FIFTEEN years have elapsed since the first encounter between troops armed on both sides with breech-loaders took place, and proved conclusively for those engaged that the days for column and line formations were past for ever, and that wide and far-reaching changes in the drill-books were immediately necessary, on pain of certain defeat in the next campaign to those who neglected the warning.

Such changes were at once made in all continental armies, and for some years past every nation has had a system, more or less workable, for the employment of its infantry in battle.

But in the year 1886, and almost on the brink of a renewal of the Eastern Question which may involve our interference on land, we stand alone of all the Powers, as unprovided with a plan of attack for our infantry as we were in 1870.

It is not for want of change. Of that we have had enough and to spare. But the changes have been introduced without sufficient regard to the conditions they were intended to meet. In fact, the Field Exercises since 1870 have never prescribed any formation for a combat exceeding the limits of a skirmish or partial engagement; applied in a battle, they would hardly have carried us beyond the limit of effective infantry fire, say 8,700 yards. But it is only within this limit that the whole strain is felt, and where the want of a system to remedy the terrible confusion of battle is most apparent.

The drill formation for the attack should be drawn up with reference to the most difficult conditions with which it will have to deal. If it will satisfy these, it will easily adapt itself to less severe ones, but the converse does not follow.

Unquestionably the most difficult task troops can be called on to execute is the frontal attack of a selected position held by men approximately equal to them in quality and in armament. To fix

clearly the nature of the task, let us see how the writers of the present day picture the course of a modern decisive attack on an enemy in a position of his own choosing, strengthened presumably by hasty entrenchments. Such a position may be assumed to consist of a long undulation of ground with open gentle slopes, no continuous obstacle in front, and a fair field of fire over the surrounding country, up to about 2,000 yards, at which distance a corresponding and approximately parallel ridge hides the movement of troops beyond from the eyes of the defender.

Let us further assume that the operations of the previous day have ended in the withdrawal of the defenders' cavalry divisions, and the discovery by the attacking cavalry of the limits and general outline of the enemy's position.

The army itself has advanced to within a distance of some four or five miles of the opposing force, and bivouacs for the night, covered by outposts. We will confine ourselves to the infantry only of the army corps to which the execution of the decisive blow has been allotted, only referring to the action of the other arms when absolutely necessary.

The first step in the conduct of an action is to form a line of guns to crush the enemy's artillery fire, and, secondly, to prepare the way for the infantry. The time required to carry these two operations out, it is impossible accurately to determine, but experience shows that it may probably be measured by hours.

The troops on both sides being considered equal in quality, it will not be safe to attempt to form this first line of guns under cover only of the cavalry, as was so frequently done during the campaign of 1870 (not always with impunity even then, as witness the attack by Zouaves on the batteries of Manstein's Corps (IXth) in front of Amanvilliers, at the commencement of the battle of St. Privat—Gravelotte.)

It will be necessary, therefore, to send out in front of the artillery a covering force of infantry, whose duty it will be to prevent the enemy's establishing bodies of infantry near enough to seriously annoy the gunners by long-range fire, say within 1,500 yards.

Now at this stage of the action it cannot be to the interest of the defender to attempt a serious attack against the batteries, the loss to be faced is very heavy, and the result very uncertain; nor will it pay the covering party to get too close, for it would be impossible to maintain their exposed position for long within the range of armed fire. They will, therefore, probably content themselves with getting within about 800 yards of the enemy's infantry,

whose position, again, is fixed by the necessity of being at least 500 yards in front of their artillery in order to avoid danger from premature bursting of shells.

The attacking artillery will, in suitable ground, have chosen their first position at about 2,000 yards, which leaves them about 700 yards behind the covering party; and since the supports cannot lie out in the open between the firing line and the guns, both on account of their exposure to the enemy's fire, and also of the danger of prematures mentioned above, and since also they cannot be drawn up immediately behind them, on pain of becoming the stop-butt for the enemy's overs, they (*i.e.* the covering party and its support) will be separated from each other by a distance of at least 1,000 yards.

Hence it is necessary to give considerable strength to the covering party, as its position must be held at all costs, and its reinforcement is obviously attended with great difficulty. To complete the preparation for the attack, it is necessary to bring up a sufficient number of rifles to a range at which their aimed fire begins to acquire an actual power.

The fire of the covering-parties alone is not sufficient to accomplish this purpose, nor will they in all probability possess in themselves sufficient momentum to advance to a shorter range after prolonged exposure to a heavy fire. Fresh troops, therefore, must be brought to their support through the line of batteries, whose fire, ceasing for a moment to allow them to pass, must be then resumed with greater intensity to cover their further advance. If this advance be made rapidly and unexpectedly, it will probably bring with it sufficient momentum to carry on the covering-parties some 150 yards nearer their object, a reduction of range which will not fail to have its due effect on the accuracy of the shooting.

Under cover of this fire the remainder of the troops allotted to the preparation of the attack approach; these troops consist of those units of the first line* not already engaged, and it is their duty to carry on (by successive reinforcements) the shooting-line to within decisive range of the enemy's position.

The intervals of time at which these successive reinforcements will be required are deduced from the practical experience that, as the range decreases and the losses increase, a point is reached beyond which no troops can remain halted on the same ground for

* Scherff divides the field of attack into two zones:—

Zone of preparation from 700 to 300 yards about.

„ of decision „ 300 to 0 „ „

300 yards is, therefore, about decisive range.

more than about five minutes. They must either advance or retire; if they do not possess in themselves the requisite momentum to carry them forward before the expiration of these five minutes, they will retreat unless support reaches them. A reinforcement should, therefore, always be at hand, able to reach the shooting-line in time to prevent its retreat; and a distance of about 400 yards practically satisfies this condition.

It is not necessary that the front of the reinforcement should be co-extensive with the front of the shooting-line, for the impulse to advance will make itself felt to a considerable distance to either flank of the advancing body. In this manner the fighting-line advances till it reaches a distance at which the effect of the fire becomes overwhelming, say about 300 yards. And it now becomes the duty of the second line (or "Haupt-treffen") to give the final impulse for storming the enemy's position, clearing him out of it, and occupying its further boundary, leaving pursuit to the third line.

If the resistance is desperate, the second line may be called on to furnish supports to the shooting line before the limit of the zone of decision is reached, and may indeed be completely expended in the effort to gain it; in that case, the duty of the second line devolves on the third line, and that of the third line on the reserve.

But, in any case, the assault once started must on no account be checked till the further limit of the position is reached (*i.e.* a point from which the enemy can be pursued by fire). Here it must be stopped, and at any cost; for this is just the moment when offensive returns promise the greatest chance of success, and when even against the best troops a dashing charge of a couple of troops of lancers may, in the absence of closed detachments of fresh infantry, turn the scale.

It is the special province of the third line to meet this danger, or, failing the third line, the reserve, which must therefore have followed the attack sufficiently closely to be at hand when wanted. But if the reserve itself has been necessarily retained by the leader for employment at some moment, or on some spot outside the sphere of the attack itself, *e.g.* to cover the outer flank of the advancing lines against a counter attack, the rapid advance of artillery and of cavalry into the captured position becomes imperatively necessary.

This completes the picture of the attack, as drawn by the leading German authorities,* and we have now to apply our drill regula-

* Scherff's *Kriegführung*, Meckel's *Taktik*, Cardinal v. Widdern's *Handbuch der Truppen Führung*, &c.

tions to it, and to see in what manner they may be best adapted to the execution of the task before us.

The first and most salient point to notice is the entire silence of the regulations as to the duties, relative strength, and formation of the second and third lines.

From a study of the "Field Exercises," one would rise with the conclusion that a single battalion possessed in itself (when extended for attack) sufficient strength and depth to carry a position held by an equally well-armed enemy; and all the suggestions hitherto made for their improvement appear to be based on the same assumption. But that such an assumption is untenable can be shown from history; to give all the examples on which this opinion is based, would be, to reproduce about one-third of the Prussian official account of the 1870 campaign, and a similar fraction of the best histories of the Russo-Turkish War of 1877.

The following quotation from Meckel's *Taktik* (p. 209), while it does not explain why it should be so, will at least place it beyond doubt that, in the opinion of experienced men, depth is essential to success in the attack:—

"One is inclined to under-estimate the consumption of men in the fight. It is difficult to grasp the idea that for a portion of the front on which only one man can fight at a time, it is necessary to have ten men in readiness, and to explain the matter and theoretically to show the necessity for so doing would be difficult; here history alone can help us."

Let us see, then, how far to the front our present authorised attack formation will take us, and how it may most conveniently be adapted to fill a place in any complete scheme.

The necessity for an adequate covering force for the first artillery position has been already pointed out. This covering force, as shown above, must be strong enough to resist any rush on the guns, by its own fire, both on account of its distance from its support, and also because bringing them up would entail a cessation of the fire from the batteries at the very moment when it can least be spared (*i.e.* when it is necessary to distract the enemy's attention from the advancing infantry).

If we take one man to two paces of front, then allowing for losses in taking up position (necessarily heavier than when lying down firing under cover), two companies will be sufficient to cover each group of three batteries. That guns must fire over infantry, and infantry be posted behind guns, is now-a-days unavoidable; for it is necessary, in order to maintain an effective fire on the enemy, to bring them as close to his line of defence as possible without

incurring too high a percentage of loss, say within 1,500 yards; and hence, if the guns were placed on the flank of the attack, the range to that portion of the enemy's line opposite to the central line of advance would be unduly increased.

The question now arises, from what troops is this covering party to be taken? Shall we break up a single battalion to cover the front of the batteries? or shall they be the leading companies of the battalions of the first line drawn up in rear of the guns, and waiting for the moment to advance? The first alternative must be rejected, at any rate in a pitched battle, though it may not be possible to avoid it in a battle developed from column of route; because, since it is impossible to withdraw them, or to close them to a flank, when the attack itself advances, each of the battalions will be thrown into confusion from the very outset by the intermixture of men of another regiment, and at a time when an absence of confusion is specially important, in order that a thorough control of the firing (by using volleys) may be maintained. That the position of these companies is much exposed is admitted, and also that great difficulty may be experienced in bringing up the battalions, each in rear of its respective company, but it is submitted that the possibility of preserving the units intact exists, whilst in the first case it is entirely lost.

The next step will be to commence the infantry preparation for the attack. This must be effected by reinforcing the covering party in such a manner that the fresh troops bring with them momentum enough to carry the previously engaged line forward to the distance at which the fire of dense lines of skirmishers becomes thoroughly effective, say between 600 to 700 yards. To reduce the loss whilst passing through the batteries, and to bring along the requisite momentum, the advance must be made in extended order, and simultaneously.

It is undoubtedly difficult to take an extended line down a fire-swept glacis and to prevent them firing into the backs of the men in front of them, but there is practically no better way of doing it. Even the Prussians have been forced to admit that the company column can no longer come within 2,000 yards of artillery fire, and to attempt at this stage of the action, when the defender's attention is not yet riveted on the firing-line, to bring troops up in line through the guns would only lead to an involuntary formation of loose (as opposed to individual) order, with all the disadvantages which necessarily result when men take the law into their own hands.

At a subsequent period of the engagement, when the enemy's

attention is thoroughly held by the volleys of the now reinforced covering party at effective range, line and even small columns may be brought up, but it will scarcely be advisable to count on even the third reinforcement being able to get to the front, except in extended order. The duration of the fire fight, which will now ensue, will depend on the extent and thoroughness with which the gunners have done their work.* Except where a road or ditch running parallel with the enemy's front gives cover, ten to fifteen minutes must suffice, for the losses will rapidly increase as the enemy gets the range, and the desire to advance will evaporate rapidly, till perhaps the advance of even strong reinforcements will not be sufficient to overcome the inertia of the firing-line.

But the preparation once completed, the advance to the decisive range of about 300 yards must be pushed on with all possible speed, in echelons, one echelon covering the advance of the other by its fire. The characteristics of this phase of the action are rapidly-increasing losses, frequent change of command, and growing confusion, as companies and even regiments begin to mix. As already mentioned, those who have had to face it say that within about 500 yards of the enemy's position the fire becomes so terrible that no troops can stand on their own ground against it for more than five minutes; if support does not reach them they will retire.

This condition regulates the distances to be kept between the successive lines of the attack. A support must always be within such a distance of each echelon that it can reach it within the limit of time, say about 400 yards.

If the artillery fire has taken good effect, and the moment for the advance from the limit of effective fire (700) has been well chosen, it is probable that the shooting-line will press on to about 500 yards without reinforcement, but from 500 to 300 the impulse for the advance will have to be given from behind.

The number of such impulses required will depend on the number of halts which have to be made, and these, again, on the length of the rushes, which should be long enough to allow the lying-down

* It is generally laid down that the artillery, after having subdued the fire of the opposing guns, should advance to effective range of the enemy's infantry. But, actually, such an advance could rarely take place, nor is it indeed necessary. In undulating country there will generally be but little latitude in choice of positions. The first will obviously be as near to the crest of the ridge as possible, so as to derive the advantages of concealment and command, and an advance down the slope of the hill towards the enemy would render the conditions for observing the effect of the fire, and for maintaining it to the last, over the heads of the assaulting troops, so unfavourable that it would be better not to make the change.

echelon to fire from two to three rounds, but not long enough for the enemy to change his aim from one echelon to the other ; twenty to thirty seconds satisfies both these conditions, approximately, and corresponds to a distance of 75 to 100 yards in marching order, or 100 to 150 if the packs have been taken off.

Short rushes of thirty yards must be absolutely condemned, since the number of reinforcements required will be practically proportional to the number of advances which have to be made from the halt.

Taking 100 yards as the limit of the rush, and the conditions generally favourable to the attack, the troops of the first line will suffice to reach the point at which the decision commences, and their distribution will have been as follows :—

1st double company, covering the guns.

2nd double company, carrying on the 1st to the limit of effective fire.

3rd double company, to give the first impulse forward in the advance to decisive distance.

4th double company, to carry on the shooting-line from 500 to 800 yards.

At the moment the advance from the limit of effective fire commences, the supporting lines should be following each other at distances of 400 yards respectively, and should advance in quick time without halt or check, reinforcing at the double when such reinforcement is necessary.

Should, however, the resistance be obstinate, the forces of the first line will not of themselves suffice, and the second line will have to be drawn on. But this line should be brought up as far as possible intact, and in line ; it would not, therefore, answer to form it in two or more groups, as this would detract too much from its momentum in the rush ; hence, if it is called on for reinforcements, these will have to be sent forward at the double. As the rapidity of the advance will have been checked by the obstinate resistance that has occasioned this call, and as the second line is supposed to maintain uninterruptedly its movement in quick time, the distance between the two lines will have probably been considerably diminished, and there will be no difficulty for the reinforcements to overtake the fighting line.

The third line follows the second in line, and at a similar interval, prepared to take the place of the second, if necessary, while the reserve accompanies the movement either on the exposed flank or in rear of the centre.

The main points to be insisted on are : (1) the rapid advance of

the shooting line from 700 to 800 yards; and (2nd) that neither check nor halt is allowed to occur amongst the troops in rear. With regard to both points, it is obvious that the amount of loss suffered is proportionate to the time under fire; and if it were not for the absolute necessity for distracting the enemy's attention by the fire of the echelons during the advance, and also for the necessity of bringing the men up to decisive range as fresh as possible, it would be better to cross the whole intervening space without firing at all, but, that being practically out of the question, we can only reduce the time occupied in crossing it as much as possible. The fire of the echelons in this stage of the attack is principally useful as a means of distracting the enemy's attention; the conditions are altogether unfavourable to accurate shooting, and the only chance to reach, as rapidly as possible, a distance within the point-blank range of the rifle, from which to pour in a fire which makes up by quantity for absence of quality.

Hitherto we have only considered the front of a single battalion, and we have now to combine the battalions of a division, which is practically the unit of attack in battle. It is true that the front of a British division formed for attack is in itself too narrow, being only about 800 yards, but two divisions attacking alongside of each other act each for itself, independently of the other.

We require three lines and a reserve. The usual proportions observed between these lines in Germany is, one-fourth of the whole for "*Vortreffen*," one-half for "*Haupt-treffen*," one-fourth for "*Zweiter linie*" (our third line), and for reserve a detail from another command.

Our division of a brigade into three parts renders a corresponding grouping impossible, since it is inadvisable to split up the battalions. We are, therefore, compelled to make our lines all equal, *i.e.* each of one battalion, and form the reserve out of one or more divisional battalions. The most convenient formation, therefore, for rendezvous will be a mass of brigades alongside of each other, the columns deploying as they get within artillery range.

The size of the echelon is the next point to be determined.

It should be a fundamental principal to make these as large, and consequently as few in number as possible. Prince Hohenlohe, in his pamphlet *Ueber Infanterie* (p. 94) says: "I have seen even more complicated advances by rushes practised. The fighting-line was divided into three sections, of which each in turn ran forward. This goes against the grain of good troops, for when one section has gained ground towards the enemy and has opened fire, then honour and comradeship both demand that the remainder

should hurry up to share the danger, shoulder to shoulder. The moment, too, in which the first echelon opens fire, is just the most favourable for the others to advance, for the enemy will have turned all his rifles on the men that ran forward first. Still less practical is the experiment I have seen tried, of dividing the fighting line into more echelons, of which first the odd, and then the even numbers ran forward. The centre sections of the line, that remain lying down, have their field of fire so narrowed that they can do but little. For this reason I have never permitted, within my command, a fighting line to advance in more than two echelons. The front of each brigade should, therefore, form a single echelon, and as it is only equal to the front of two companies extended at four paces, which is practically the same thing as a single German company at war strength, it will not prove unduly difficult to handle.

But in any case the difficulty must be faced, for it is far outweighed by the advantages of unity of command in the fighting line, and consequently the greater ease with which the direction of advance can be maintained.

This last point must not be overlooked; it is the natural tendency of troops, when fired upon, to move in the direction from which they supposed the fire to proceed, and a careful study of the early battles of the Franco-German War* will show many instances in which the companies of battalions brought into action as units in line of company columns, were, at the conclusion of the action, found fighting many hundred yards apart. Such disposition is obviously much less likely to occur in an advance composed only of two echelons, than in a line of similar length advancing in numerous smaller fractions.

It will be seen, therefore, that though the existing regulations fall far short of the actual requirements, their general principles may be easily adapted to form part of the larger scheme; let us now see how the recently proposed plan of attacking from double company columns on the two centre half companies will answer.

It is obvious that it can only be applied to the battalions of the first line, and hence it would have little real influence in preventing the mixture of different battalions, which indeed no scheme, in practice, can ever prevent.

But, even applied to the first line, it presents numerous and grave difficulties.

In the first place, the covering party for the artillery will be

* *Vide* storming of the Vionville ridge at the battle of Vionville by the 20th Regiment infantry, 18th August 1870, *Pr. Off.* p. 560-561, vol i. of original.

formed by a line of sections under the command of subalterns and sergeants; for it is evident that the captain cannot leave three quarters of his company, in order to take command of the remaining fraction; and as an alternative, grouping four sections under one captain, would only be anticipating the subsequent unavoidable confusion.

Advancing another step: when the remainder of the half companies to which the sections in front belong, move forward to reinforce, how are they, as they emerge from the smoke of the batteries (whose fire is maintained as long as possible, to cover the movement from the enemy) to recognise the sections to which they belong, some 600 yards in front of them. Picture, for a moment, the position of a young subaltern in command of some twenty men, half on one side, half on the other, of a gun-carriage, in front of him a veil of dense smoke clinging to the damp ground; a shell bursting just to one side causes him and his men to turn their heads for a moment in its direction, and, when they resume their advance the next moment, what reasonable possibility exists that it will be in exactly the same line as that in which they started in! but the least deflection will be fatal to their chance of hitting off the precise fifty yards of front into which they ought to fit.

It is, of course, true that similar confusion will arise in the case of any troops passing through the guns; but the longer the line, the more difficult will it be to turn it out of its true course. Even where, as in the case of smaller forces, the guns are posted on the flank, the disadvantages of a divided command will be felt.

The shooting line consists of a number of sections (or half-companies) of different companies, the support is of similar composition; if one captain takes two units in the former, and another two units in the latter, both labour under the disadvantage of commanding a force, only half of which is made up by their own men.

If both captains stay behind with the supports, the leading of the fighting line is in the hands of the subalterns, a duty for which they are obviously not as fit as the captains, or, if the places are again reversed, the subalterns have the still more difficult task of keeping the supports in hand, and preventing them from joining the fighting line on their own account.

Even in Germany, where few captains get their companies under twenty years' service, this difficulty has been so much felt, that the extension of a whole company (200 rifles) in spite of the length of front, is preferred by many writers as an alternative. Our small companies just meet the case, provided their numbers

are well kept up. If a German captain can command a company of from 200 to 250 rifles, when extended, there is no apparent reason why an Englishman should not command one of half the strength, especially when we take into account the larger proportion of subalterns, and non-commissioned officers, which he has to help him. Whether the men are English or foreigners, the difficulty to be overcome in leading them will depend on the thoroughness of their previous training; if our system of company training is so very inferior as to render the control of an extended line of forty to fifty rifles impossible, the sooner we alter our system the better, for it is in that possibility that the only advantage of our eight-company battalions over those of continental armies lies; and more real good will be derived from making the most of our own strong points, than by blindly copying the form, not the spirit, of the Prussian army.

The size of the Prussian company was due to economic considerations, and to the difficulty of supplying a larger number of officers, of the social rank from which they alone were drawn. It has grown into their system, and they wisely make the best of it, but, like most human institutions, it has defects, which they frankly acknowledge.

These defects are the same, practically, which have been enumerated above, as belonging to the proposed double-company column, viz. the company, when extended, is too large for one man, and, if to reduce its front, half is extended, and half follows in support, the captain, to really command his company, must be in two places at the same time. Even then the front of the half company is equal to that of our whole company, but there are no complaints of its being unmanageable. The fact was distinctly noticed, that in action, when both support and fighting line belonged to the same company, it was very difficult to prevent the former from joining the latter without word of command, an important point to remember when the conduct of the support has to be left in the hands of a more or less inexperienced subaltern.

Now these defects, which in themselves are not as great in the German system as they are in the scheme we are considering (viz. double-company column on the two centre half-companies), on account of the longer service and better training of the German subalterns, are all avoided in the old attack formation, in which each company is kept unbroken in the hands of its captain; both support and fighting line being each in the charge of an experienced man, as long as they remain distinct. It is true that when reinforcement takes place the two become intermixed, and on the

parade ground, the senior captain takes command, but the chance of the two captains being both unwounded at this stage of the action are too remote for consideration. Moreover, the conduct of the firing of the covering party, in the preliminary stage of the action, renders it particularly desirable that whole companies, and not fractions, should be employed; for this is the one stage of the action in which a systematic employment of long-range volley-firing is possible, promises most results, and enables the expenditure of ammunition to be still controlled.

But to obtain favourable effects from this style of firing, it is essential that the fire of a large number of rifles should be brought to bear on the object (see *Pruss. Mus. Regs.* of October 1875) and our company is practically the most convenient body we can employ.*

In working by companies we still do not absolutely forfeit the chance of keeping the commands distinct, after the arrival of the first reinforcement. Generally the covering party will be able to obtain some cover, such as a bank, ditch, or hedge, behind which it can be closed to a flank to make room for the first support. Such closing to a flank is, of course, always possible under cover, though not out in the open. Even if the ground affords no cover, the positions the covering forces are to occupy will have been determined beforehand, and they will have entrenched themselves in them under cover of darkness or the morning mist; and in many cases covered approaches for the supports may also have been arranged.

Once within the 700-yard limit, all power of controlling the fire ceases, and the personal influence of officers over men comes to an end. This is inevitably the case, for even supposing the men to be all heroes, their attention is fixed on the enemy in front, and it is impossible for them to keep themselves informed of the progress of the casualty roll in rear; the man who commands them one minute is struck down the next, and there is nothing left for them to do but to join on to the first rush, or rather flank, whose

* I have not a corrected copy of our own regulations at hand to refer to, but till 1888 volleys by half-sections were recommended. It is difficult to understand how half-sections came to be considered as the fittest number of rifles for the purpose, for at that time there had been no regular experimental inquiry into the subject, nor had the officers then connected with the musketry department any experience of modern European war. On the other hand, after three years of experiment and the most recent experience of war, the Germans decided on a company as being the smallest number of rifles to fire volleys at long range, and laid it down as a general principle that "a large number of rifles should be brought to bear," &c. Which opinion is most likely to have been well founded, the reader may judge for himself.

impulse reaches them, or to follow the first officer who will lead them.

In moments of intense excitement and danger, the mass of mankind, whether civilians or soldiers, recognise a leader by instinct, whether they have ever seen him before or not; and, up to a certain point, as long as an officer is willing to lead, he may rely on the men following him, no matter what company he may belong to.

Let us now examine the bearing of the above on the tactical training of the men in peace. It will be necessary to make a clear and marked distinction between the skirmishing attack of an advance guard or demonstrating body, and the decisive assault by which a battle is to be won. For the former, good shooting and skill in taking advantage of cover are the chief essentials; for the latter, rigid discipline, a discipline strong enough to enable troops to face the unavoidable heavy loss, without thought of cover on the part of the individual.

The idea of drilling men like machines can no longer be entertained; neither can we meet the difficulty by reverting to the old distinctions between troops of the line and light infantry. We can only succeed by teaching the men in the school-room the conditions on which success depends, and then by impressing it on them by making a sharp distinction on the parade-ground between the two methods. It is in this point that our drill regulations principally fail.

The attempt to adapt the old skirmishing drill of the peninsula to the modern attack formation necessarily failed, for it was an effort to reconcile two totally opposite conditions, and it struck at discipline precisely where it was most important. The object in view in drilling men is not merely to ensure the execution of certain formal movements on parade under favourable conditions, but to give them true discipline, *i.e.* the spirit to face heavy loss without flinching—the one thing, in fact, which constitutes the superiority of a body of soldiers over an armed rabble.

But our practice in peace practically ignores this, for it sanctions the relaxation of discipline at the very moment when, on the battlefield, the necessity of it is most felt. On the caution to extend for attack, the officers return swords, the men stand at ease without word of command, and henceforth the movements are made without attention to either step, dressing (or even silence sometimes); in fact, the whole thing bears the stamp of slackness upon it.

In Germany, on the other hand, the practice is exactly reversed;

when the signal to advance to the attack is given, all troops behind the fighting-line are called to attention, and the advance is made "in Parade Schrett," with drums beating and colours flying.*

This may be considered as going too far in the opposite direction; but the principle is undeniably sound, viz. of fixing the men's attention by compelling them to attempt a difficult thing, so that their minds are not so open to receive other impressions; it is by no means an unheard-of expedient, for steadying wavering troops, to halt them under fire and put them through the manual; and the idea, in both cases, is the same.

There is, in fact, a close analogy between drill and mesmerism; in both cases the patients resign their wills into the hand of the operator, and in both cases, ultimately, the will of the operator or commander becomes stronger than the natural disinclination of the subjects to do what is required of them.

This explains why men will always drill better under an officer whom they feel is in earnest, than for one whom they know to be taking no interest in it.

A horse is, in fact, even more susceptible of discipline than a man; for, though naturally far more timid than man, when once thoroughly trained, even when deprived of his rider, he will keep his place in the ranks, in spite of the dangers which surround him.

It is this that renders steady drill all important, as it enables us to overcome the natural instinct of self-preservation, and makes it easier for men to obey the will of another than to make up their minds to run away.

The necessity of such drill is greater now, perhaps, than at any former time; for the mental strain occasioned by a breech-loading fire is far heavier and of longer duration than that produced by the muzzle-loader.

At this point the opinion of those officers, whether French, German, Austrian, or Russian, who have fought against both is unanimous; and since we ourselves have never had to fight a battle

* Till quite recently, with fixed bayonets as well; but I believe that order has since been cancelled, though it still has many supporters. The fixed bayonet was the outward visible sign of the inward determination to come to close quarters. It is true that it interfered with the accuracy of the shooting; but as that was always out of the question in the excitement of the decision, the loss was not serious. But if the bayonet was fixed on the rifle in the sensible manner adopted by the Turks, viz. under, not on one side of, the barrel, the shooting would be absolutely improved, for the weight of the bayonet corrects the tendency of excited men to fire high. In fact, the Turkish rifle with fixed bayonet comes up to the shoulder: so readily that one might snap shoot with it just as well as with a shot gun.

against well-trained troops armed with breech-loaders, we must of necessity be guided in this matter by those who have.

If, then, in the days of Brown Bess, the utmost discipline was considered necessary to enable a line to advance through a zone of fire barely 150 paces in depth, how much more, therefore, is it now required, when the new arms have multiplied this zone of danger by ten!

Troops no longer fight in line, it is true; but, to bring them up to the shooting line they must all pass over a fire-swept space, either in line or in a formation in which the maintenance of discipline is even more requisite, and at the same time more difficult.

The changes we require are simple. Drill must cease to be looked on merely as a means of securing a good march past;* but it must be fully recognized as the method by which men are enabled to conquer their natural aversion to danger; and to mark this idea the utmost smartness should be insisted on in the attack.

Hardly more than a word requires to be altered in the drill-book, though the spirit in which it is interpreted must be changed. But to grasp the spirit is just the difficulty, for it is entirely opposed to the tactical teaching which the bulk of the army has been compelled to absorb in the struggle of its members for promotion.

We have been examined in minor tactics till our intellects appear to have become dwarfed and our judgment distorted. "We cannot see the wood for the trees." No doubt the knowledge we have thus acquired may prove most useful when applied in its proper place; but its proper place is not the battle-field, and it is only on battle-fields that the fate of an Empire can be decided.

* But a good march past will be the inevitable result of steady drill.

The Black Book of the Admiralty.

By FRANCIS H. MILLER.

IN the *Maritime Dicaëlogie*, published in London in 1664, Dr. Exton, Judge of the High Court of Admiralty, describes a certain ancient authentic book "as having been from time to time kept in the Registry of the Court for the use of the judges of the Admiralty successively, and as free from suspicion of being corrupted or falsified, as the records of any Court whatsoever."

This book, he says, contains the "ancient statutes of the Admiralty to be observed both upon the ports and havens, the high seas, and beyond the seas, which are engrossed upon vellum in the said book, and written in an ancient hand, in the ancient French language."

The "Black Book of the Admiralty," which is thus described, after being constantly referred to as the standard authority in the Admiralty Court until the end of the eighteenth century, suddenly disappeared, Mr. Alexander Luders, who had occasion to consult it in 1808 in the course of his researches into the use of the French language in our ancient laws, being informed by the proper officers at Doctor's Commons that "they had never seen such book and knew nothing of it."

In its absence, an English MS. in the library of the College of Advocates in Doctor's Commons, entitled "An Abstract of our Lawes of Oleron and of the Lawes in the antient Black Book of the Admiralty, and of our Maritime Lawes amongst the Acts of Parliament, &c., comprised in an Alphabetical Table, with Translations of the said Lawes of Oleron and those in the Black Book," was made to do service for it; but in 1858, in consequence of the dispersal of the College and the sale of its library, this source of information ceased to be available for public purposes.

There was, however, a modern transcript of the Black Book in the library at the Admiralty, Whitehall, and various MSS. in the British Museum, by the collation of which it was possible to restore the text with reasonable accuracy, and this task Sir Travers Twiss, H. M. Advocate-General, set himself to perform in 1871, thereby adding another and important record to the many brilliant services he has rendered to law and letters.

Three years later the missing book, after being lost for more than half a century, was discovered accidentally at the bottom of a

chest which was supposed to contain private papers belonging to a former Registrar of the Admiralty Court, and which had been transferred from his private office to the cellars of the Registry.

This fortunate discovery enabled it to be ascertained with tolerable certainty that while the Black Book of the Admiralty—compiled for the use of the Lord High Admiral or of his lieutenant who sat as his judge in the High Court of Admiralty—contained ordinances drawn up antecedent to the reign of Edward III., no part of the writing, which was in various hands, was of a period earlier than the reign of Henry VI.

The laws of Oleron already referred to were, according to tradition, adopted in Castile by Alphonso X. in the thirteenth century as a body of positive law for the settlement of disputes in maritime matters, and were introduced into England by King Richard I.; in support of which tradition it may be mentioned that the island of Oleron furnished an important contingent to the great fleet which was sent forth in the second year of the reign of that King for the relief of the Holy Land; and amongst the five commanders-in-chief of that fleet was William de Forz of Oleron, whom the King constituted one of the justiciaries of his navy.

Having thus briefly indicated the source from which the information is derived, it is proposed to select a few ordinances contained in this book, and which throw a curious light upon the manners and customs of the period.

In the present day, the authority of a captain on board his ship represents probably the most autocratic form of government that exists, but, while his authority is upheld and vigorous penalties for mutiny are exacted in the ancient "Customs of the Seas," he was at the same time specially enjoined, in more than one instance, to take the opinion of the crew on important points, or to abide by the decision of the majority.

For instance, in the event of a question arising as to the desirability or otherwise of setting sail, it is provided that if "a ship is in haven and stays to await her time, and the time comes for departure, the master ought to take counsel with his companions and to say to them, 'Sirs, you have this weather.' There will be some who will say the weather is not good, and some who will say the weather is fine and good. The master is bound to agree with the greater part of his companions. And if he does otherwise, the master is bound to replace the ship and the goods if they are lost, and this is the judgment in this case."

Again, the incompetency of a pilot was punishable by death; but the penalty was only to be exacted by the decision of the majority.

“And if by chance that person who shall be taken as pilot does not know those parts in which he has said and promised and agreed to pilot the ship or vessel, he who has been taken as pilot and who has promised this to the managing owner of the ship or vessel, and cannot fulfil anything of what he has promised, in such case ought to lose immediately his head, without any remission and without any mercy. And the managing owner of the ship may cause his head to be cut off, and is not obliged to complain to the authorities of the place unless he chooses, because the pilot has deceived him, and has placed in peril of destruction the managing owner of the ship and those who depend upon him; and, in addition, the ship and all the goods on board. Nevertheless, it should not rest solely on the judgment of the managing owner of the ship or vessel that he who shall have been taken as pilot ought to lose his head or not; on the contrary, it ought to rest on the judgment of the master and the merchants and all the ship's company,” &c. And it goes on to explain that the reason for this enactment is that “there are managing owners of ships or vessels who are destitute of sense, as well as other persons”; and, further, that were some who might condemn a pilot to death either out of spite or to save his wages.

If mariners going ashore without leave “get drunk and make a row (*seng veront et fourt contekes*) and there are some of them who are hurt,” the master was at liberty to leave them behind and hire others in lieu; moreover, if he had to pay higher wages to the substitute he could charge the difference. But it is pointed out that his chance of obtaining this compensation depended upon whether he “can find anything of theirs.” If, however, a mariner fell sick and became incapable of work, the master was to put him ashore and seek a lodging for him, providing him, moreover, with a candle or tallow, and one of ship's boys, or, failing that, a hired woman to tend him.

The master was to be the judge in the case of dispute between the crew, and a scale of fines is laid down for various offences, *e.g.* “he who shall give the lie to another ought to pay fourpence; and the master, if he gives the lie to anyone, ought to pay eightpence; and if anyone gives the lie to the master, he ought to pay as much as the master.” But these penalties appear to be limited to offences committed while bread and wine were on the table.

If the master struck one of the mariners the latter was to abide the first blow, but if it was repeated he might defend himself; but if he struck the master first he became liable to a fine of one hundred shillings or to lose his fist, at his own discretion.

The rights of sanctuary were recognized in a further enactment on the same subject, which states that "a mariner is bound to bear with the managing owner (*son senyor*) of a ship if he reproaches him, and if he runs to attack him the mariner ought to run away to the bow of the ship and place himself by the side of the chain; and if the managing owner passes the chain he ought to run away to the other side; and if the managing owner passes to the other side he may defend himself, calling persons to witness how the managing owner has pursued him; for the managing owner ought not to pass the chain."

This enactment is based on one contained in the Decisions of Trani drawn up in the year 1068, which required a mariner, under similar circumstances, to retire from the prow behind the bench of oars, beyond which, if the master pursued him, he was at liberty to defend himself.

If contention arose between the mariners, the master, before turning one or all of them out of the ship was bound to take away the table-cloth from before them three times as a warning; and as there was only one "kitchen" or cooked meal a day the practice was apparently equivalent to a three days' notice, an interval which allowed of hot tempers becoming cool.

The scale of diet was fresh meat on Sundays, Tuesdays, and Thursdays, and on the other days porridge, and every evening bread was to be served out with an accompaniment of cheese or onions, or sardines, or some other fish; wine was also to be served out daily unless the price exceeded three besants and a half, in which case prunes or figs were to be issued in lieu. The mariners of the coast of Brittany were to have only one cooked meal a day, "by reason that they have drink coming and going"; but the mariners of Normandy had two, "by reason that their master only supplies them with water in going. But when the ship arrives at the land where the wine grows the mariners ought to have drink, and the master ought to find it." It was further stipulated that the rations were to be doubled on solemn feast days, and that servants were to be kept to prepare the food for the mariners.

In order that he might always be available for duty the mariner was forbidden to undress himself unless he was in a port for wintering; and the penalty of disobedience was that for each offence he was to be plunged into the sea with a rope from the yard-arm three times, and after the third offence he was to forfeit his pay and any share he had in the freight of the ship.

The penalty for sleeping on watch was also a rigorous one. If the offence was committed while at anchor in a friendly port, the

offender escaped with the forfeiture of his daily ration of wine and of the accompaniment usually served out with the bread; but if in a hostile place he was, in addition to these penalties, to be "beat naked by all the crew and be plunged in the sea three times with a rope from the yard-arm," if a mariner of the fore-castle, or, in the case of a mariner of the poop, he was to lose his wine and all his food except his bread, and have a pail of water thrown over his head downwards.

The custom of cementing a bargain by shaking hands which prevailed among the Romans, and which is referred to in the plays of Terence and Plautus, is frequently recognised in the "customs of the sea," as, for instance, in a clause which binds the mariner, when once he has shaken hands with the managing owner of a ship or vessel, to go with him precisely as if an agreement had been made before a notary. It further appears that there were six different methods of hiring mariners:—

- (1) For the voyage, at a lump sum.
- (2) For so much a month.
- (3) For so much a mile.
- (4) At the discretion of the managing owners.
- (5) For a share of the freight.
- (6) For the right to load goods on his own account.

If goods were damaged by rats on board ship, the managing owner was liable for their value, provided there was no cat on board; but if there had been a cat when the voyage commenced, and it had died and no opportunity had occurred of replacing it, the owner was not to be held responsible.

Every mariner was required to bring armour and weapons with him on board, and to be prepared to use them at all times in the service of the ship, and he was strictly forbidden to sell them before the completion of the voyage, under the penalty of being fined at the discretion of the managing owner. Another curious stipulation was that every mariner in charge of a boat was obliged to "put all persons on shore, and to take off his breeches for that purpose; and if he does not do so, or is not willing to do so, he ought to pay all the expenses which any person incurs."

The garments referred to, which were probably some kind of loose small clothes, are again legislated for in another article, which allots the knife and girdle of any passenger who died on board ship to the boatswain and the breeches to the watchman, in return for which those two functionaries were charged with the disposal of the corpse either by burial on shore or by casting it into the sea. In the event of a passenger dying, it is further provided

that he may leave his berth to anyone he wills, and that his best vestment should go to the mate, and his bed and bed-clothes to the managing owner.

The free use made of the punishment of death has already been referred to; but a peculiarly barbarous mode of inflicting it was authorised as the penalty for any man discovering "the counsell of the king and of his fellows in a jury"; in which case, after conviction by a jury of twelve men before the admiral or his lieutenant, the culprit's throat was to be slit and his tongue drawn thereout and cut off. It was left, however, to the discretion of the Admiral to impose a fine in lieu; but hanging without a similar option was the penalty for stealing boats or anchors above the value of xxid. or of a buoy rope tied to an anchor.

Although not directly pertaining to the "customs of the sea," the following ordinance is sufficiently curious to merit transcribing:—

"Every Jew and Jewess not living in Oleron, for each time that he or she comes in to Oleron, ought to pay fourpence toll to the King, and if the Jewess is pregnant, she ought to pay eightpence for herself and the infant in her womb; and it is said that Guarners Chasteaus, when he was Seneschal of Oleron, ordered, when a Jew or Jewess went away with the said poll-tax, the Jew should be ducked once in the sea, as a penalty for not paying the same poll tax, and the Jewess, if pregnant, should be ducked twice for herself and for her infant. For inasmuch as all the goods of Jews belong to the great lords of the lands on which they may be, it would not be courtesy to take their money as a penalty; but against the person itself of the Jew who has committed an offence damages may be enforced; and the word 'duck' (*qualer*) is used when a man is fastened under the armpits with a strong cord, and thereupon is cast into the sea, and is afterwards dragged out, so that he does not die."

But perhaps the most singular of all is the following, with which it is proposed to close this brief consideration of some of the ordinances contained in the "Black Book of the Admiralty:—

"The majority say that hens, capons, and chickens may wander free within the space around the house of their lord or their lady, as far as the lord or the lady may throw an egg over the roof of the house into the heather in every direction, but two couples of gables shall be removed, and the roof of the house shall be entirely bare."

Fourteen Days Adrift.

By J. H. LAWRENCE-ARCHER.

"WE often hear people talk of the poor weak creatures of the West Coast," said my friend Commander Bunting of the *Octopus*, as we were spinning yarns together. "It is a mistake. There are doubtless weak niggers, just as there are weak white men; but, as a rule, the Kroomen employed as stokers by our steamers are muscular and courageous fellows, and often gifted with wonderful powers of endurance. When our engineers cannot go into the engine-room for more than a few minutes at a time, and then come up gasping and ready to faint, these blacks find the atmosphere quite as congenial as it would be to veritable salamanders. But their endurance is as wonderful as their strength, and under much more serious circumstances. One of our niggers must have stood six foot four on his stockingless soles, and he was robust in proportion—an Atlas in bronze! He used to make himself very useful in cleaning the copper sheathing of the ship—rather hard work, by the way—but necessary to remove barnacles and so improve her speed. One day, after spending all the morning in the engine-room, while we were cruising about, I said to him: 'Sambo, like a good fellow, do you mind taking the punt and trying your hand at the copper again?' 'Yaas, to be sure, Massa,' he replied with a good-natured grin, and sprang at once to the painter, by which he lowered himself into the boat, and commenced operations; while we set more sail in the light air, so as to cause the ship to list over for the purpose. We were gliding slowly for some time in this way, when the light air freshened into a breeze, and, as we went spanking along, we forgot all about Sambo, supposing, of course, that he had looked after himself. But we were mistaken. The chief officer, happening to look over the ship's side,

to his surprise found the punt gone, and the painter dangling loose, apparently severed by friction against a bolt. No time was lost in putting the ship about; but to no purpose. Poor Sambo was gone; and, giving him up for lost, we put into Sierra Leone, where we found the *Sturgeon*, under orders for the island of Ascension. The prospect was not much relished, since that dreary volcanic rock is, by a curious Admiralty regulation, placed under the same discipline as a man-of-war; and, in consequence, between land and water, there is little or no relaxation for anyone. Accordingly, it was *some days* before the anchor was weighed. About a week later, we ourselves received a similar order; and, in the course of three weeks, the two ships again met at the inhospitable island with its cumulous volcanic cones clustering round Green Mountain—as it is somewhat paradoxically called—like the points of a ‘Lorn brooch.’

“Having occasion to visit the hospital, or ‘sick bay,’ ashore, with the First Lieutenant of the *Octopus*, I observed, with surprise, the gigantic but emaciated form of a black man on one of the cots, and soon recognised the familiar face.

“‘How is this?’ I exclaimed. ‘What brought you here, Sambo?’ But the poor fellow only looked at me reproachfully, without uttering a word.

“‘Oh, I quite forgot to mention,’ said the First Lieutenant, ‘how we picked up the poor fellow. One day, as we were sailing along in a light breeze, the man on the look-out reported a strange object like a huge turtle [with which these waters abound] floating off the starboard bow. Accordingly, as we were glad of any break in the monotony of the voyage, the ship’s course was altered, and, coming up with the strange object, we found it to be a punt, with this huge black fellow lying, alive indeed, but *no more, in*, or rather *on*, it. Having removed him and applied restoratives, in a few days he was sufficiently recovered to tell us that he had been cleaning the sides of a ship, when, the wind springing up, he had been cruelly cast adrift. While his strength lasted, he had obtained sustenance by swimming after small turtles, and taking them back to the punt; but at length his strength failed. He had been adrift for *fourteen days* when picked up.’

“‘Ah, Massa, too bad,’ whimpered Sambo, rising on his elbow, ‘too bad, cast off ole frien’.

“‘Surely,’ said I, ‘you cannot believe us guilty of such inhumanity. It was a sad accident, and I’ll tell you all about it.’

“But he only shook his head. A tear coursed down his cheek, and he sank back on the pillow.

" 'Sambo,' said I, 'cheer up, old fellow, and we'll make up to you for all you have suffered.'

"He smiled faintly, and his eyes closed.

"At that moment the doctor came up. 'This is really very sad,' said I. 'Is it a dangerous case?' The doctor shrugged his shoulders, and, going up to the patient, lifted his hand, felt his pulse, placed his hand on his heart, and then, slowly turning to me, said gravely, 'All danger is over. He is dead!'"

“On Leave.”

HER Majesty's birthday, according to time-honoured custom, was celebrated with all the usual honours, and with, if possible, more than ordinary enthusiasm. The ceremony of trooping the colours of the Guards' Regiments took place, as usual, on the Horse Guards' Parade, St. James's Park, in beautiful weather, in the presence of a large and brilliant gathering. The band of the 1st West India Regiment, in their picturesque Zouave uniform, were present, and were commended by the Duke of Cambridge for their smart appearance. At Portsmouth the whole of the troops in garrison paraded on Southsea Common, under the command of General Sir George Willis. The smart appearance of the men—especially of the Royal Marine Artillery—and the soldier-like precision with which they executed the manoeuvres, elicited general approbation. After the completion of the Royal Salute from the Garrison Battery, seven rounds were fired by the Royal Artillery, and then the whole line fired a *feu-de-joie*, the massed bands playing six bars of the National Anthem. Seven more rounds were then fired from the field-pieces, followed by another fusilade by the infantry, and again, a third time, the process was repeated. The troops then presented arms and gave a Royal Salute, the regiments lowering their colours, whilst the National Anthem was again played. General Sir George Willis then advanced and called for three cheers for Her Majesty, the officers and men uncovering to respond. The march past was admirably executed; and if every garrison turned out as well as the Portsmouth—as I have no doubt they did—we should be proud of our army, small though it is.

The *Birthday Gazette* is always looked forward to by all classes of officers—those who have gained their laurels, and those who anticipate receiving them. Among the names that appear is that of Admiral Lord Clarence Paget, whose long and distinguished

services afloat and ashore eminently entitle him to the dignity of a G.C.B. Lieut.-General and Honorary General Sir Frederick Francois Maude, K.C.B., V.C., an officer who served in the Gwalior Campaign 1843-4, and at the battle of Punnier had a horse shot under him. In the Crimean Campaign 1855, he was dangerously wounded, and for his gallantry was made a V.C., C.B., and obtained his brevet of Lieut.-Colonel, and again in the Afghan War 1878-9, this gallant officer commanded the Second Division Peshawur Valley Field Force, November '78 to June '79. On this occasion he received the thanks of both Houses of Parliament and the K.C.B.

Lord Templetown is another officer who has most deservedly had this distinction conferred upon him, having served all through the Crimean Campaign, in command of the 1st Battalion Coldstream Guards. Among those who have been made K.C.B. appears the name of General Frank Turner, a most distinguished Bengal Artillery officer; while all are delighted to read the name of that dashing and popular officer, General Wm. Olpherts, V.C., whose sobriquet will long be remembered.

No *Birthday Gazette* for many years past has given more general satisfaction, or contained a more brilliant list of distinguished officers.

His Royal Highness the Prince of Wales gave a dinner-party at Marlborough House to celebrate Her Majesty's birthday, to which most of the Commissioners and the other officials of the Colonial and Indian Exhibition had the honour to be invited. Early in the morning His Royal Highness attended the trooping of the colours of the Guards; in the afternoon the Prince and Princess of Wales performed the ceremony of opening the new bridge at Putney; and at midnight, after the above-mentioned dinner, His Royal Highness was present at the reception of the Countess of Rosebery at the Foreign Office. As this represents about the average day's work His Royal Highness has been doing for some weeks past, it shows that he possesses business-like habits and energy to a remarkable degree, as well as an excellent constitution and powers of endurance.

The Royal Military Tournament has been brilliantly attended by crowds of people from all classes of society, and although this is the seventh time the Agricultural Hall has been devoted to this unique exhibition, every year it seems to grow in interest and importance. The object of the Tournament is to help our old soldiers, and the funds are given partly to the Cambridge Asylum for assisting soldiers' widows when they are old, destitute, and

friendless, and this institution has benefited to the extent of £4,000; whilst the balance, £7,500, has been allotted to the Cambridge Fund for Old and Disabled Soldiers. This sum, £11,500, represents the profits made up to the present time.

The Military Tournament throughout has been well supported by the public, the Colonials, and the leading members of society, as well as by their Royal Highnesses the Prince and Princess of Wales, and the other members of the Royal Family, and has been a greater success than ever.

By order of His Royal Highness the Field-Marshal Commanding-in-Chief, the prohibition against soldiers smoking in the streets has just been removed, and the following clause has accordingly been substituted for the last sentence of paragraph 18, section 7, Queen's Regulations and Orders for the Army, 1885:—"Soldiers are not to go beyond the precincts of their barracks unless properly dressed, and they are not to smoke in the streets until after 5 P.M. from October 1 to March 31, and 6 P.M. from April 1 to September 30." It may not be generally known that a paper, by Lieutenant-Colonel Drake Brockman, advocating this privilege to the British soldiers, appeared in the columns of the *Army and Navy Magazine* some three years ago.

The appointment of General Bradford to the colonelcy of the Irish Rifles instead of Lord Wolseley has been a good deal commented upon. The reason why his Lordship was passed over was that the authorities incline to the opinion that retired officers should be given the preference, to compensate them to some extent for the hardship of having their careers prematurely terminated by the operation of compulsory retirement. General Bradford was selected for the colonelcy partly for this reason, and partly because he had been at one time connected with the Rifle Brigade.

The new rifle, the Enfield-Martini, was fully described the other day at the Royal United Service Institution by Colonel H. T. Arbuthnot. General Sir Archibald Allison presided. It was claimed for this new weapon that it had a penetrative power sufficient to take the bullet through a quarter-inch iron plate at 200 yards, and the arm shot with great accuracy, as the diagrams showed. By the adoption of this arm and ammunition a very great simplification would be effected, because instead of having four different patterns of cartridges, as at present, namely the solid-drawn Martini-Henry cartridge for rifles, the coiled case for rifles, the carbine cartridge, and the machine-gun cartridge, there would in future be but one cartridge for rifle carbines or rifle-calibre machine-guns. The new bayonet to be issued with it is a short sword-

bayonet which could be used not only for thrusting, but which, when separate from the rifle, should be a useful and serviceable weapon. This sword-bayonet was a decided improvement on all sword-bayonets which had been previously in use; it had a very sharp point, it had a keen, cutting edge, and was strong and handy, and would stand a severe test. The bayonet was fixed to the underneath side of the rifle, instead of being on one side, as previously. When firing with fixed bayonets the bayonet on the side had a tendency to twist the rifle to that side, which made the shooting bad; but when it was underneath it had a tendency to depress the muzzle, which was an advantage, and, when in that position, it could not be seen by the eye when taking aim, which was a further advantage, as there was nothing to make the aim unsteady. A very animated discussion followed the reading of the paper, the majority being opposed to the adoption of the Martini breech in the new arm, and Colonel Hope, V.C., vigorously denounced the Martini breech as being the worst breech in any fire-arm. In regard to the pressed bullet shown in the cartridge, Sir Henry Halford claimed for Mr. Metford, an old Wimbledon hand, the credit of inventing the bullet adopted by the Government authorities without acknowledgment. Colonel Arbuthnot's lecture is well worth reading and studying.

An admirable likeness of General Gordon has just been published by Messrs. McQueen & Sons, of Tottenham Court Road. It represents the General in his palace writing his Journal and last despatch, Kartoum, December 14th, 1884. It was painted by Alexander Melville, and engraved by James Faed. Only 850 copies will be published, after which the plate will be destroyed, in accordance with the Rules of the Printsellers' Association, and a piece of the engraved surface of the plate must be deposited with the Association. The print is dedicated to F. M. His Royal Highness the Duke of Cambridge, by whom, as well as by the relatives and friends of the late General Gordon, it has been pronounced to be an excellent likeness. The owner of the portrait is Mrs. Surtees Allnatt, who has so much interested herself in the Gordon Boys' Home.

The Admiralty have issued orders, directing the Admiral Superintendents of Dockyards to grant every facility to workmen for visiting the Indian and Colonial Exhibition. A very kindly act was shown towards Mr. N. Cooper, foreman of the Ropery at Chatham, by the Lords of the Admiralty. Mr. Cooper having attained the maximum age of sixty years, applied to the Admiralty for an extension of a few months' time in order to complete

another year, which will considerably add to his superannuation allowance. Their Lordships have ordered Mr. Cooper to be retained until 31st March 1887.

Captain Lord Charles Beresford, C.B., R.N., continues as active as ever. A short time since, at his invitation, a large number of members were conveyed to Portsmouth, by special train, and there had an opportunity of seeing of what the navy was made. Nearly a thousand officers and men, a gun-boat flotilla, torpedo-boats, and an armoured train were then engaged in the battle of Whale Island. They were afterwards taken to Porchester Creek to witness torpedo experiments, and then returned and inspected some of the vessels building, and were shown the method of discharging Whitehead torpedoes. A few visits such as this would, no doubt, induce many members to take a real interest in debates connected with the navy.

Lord Charles Beresford is to be congratulated for having pointed out the utter uselessness of a number of ships in the navy, which, in the opinion of the noble lord, should be either "broken up," "blown up," or "sold up." Mr. Hibbert, the present Secretary, remarked that Lord Charles had done good service in calling attention to these obsolete vessels and the waste of money, and added that "My Lords" had already anticipated his proposal in regard to the sale of a large proportion of the ships on his lordship's schedule; others will be offered for sale, but none Mr. Hibbert, as a rigid economist, was prepared to promise, would be either "broken up" or "blown up."

The Colonial and Indian Exhibition is increasing in popularity daily. Officers contemplating a visit to Canada, if fond of sport, cannot do better than pay Mr. Hubbard a visit at the Canadian Court, and see the game trophy. Mr. Hubbard is a great naturalist and a first-rate sportsman, and willing at all times to give every information on a subject he is fully qualified to speak about. The beautiful Darbar Tent, or Vestibule, which has been draped with the most superb examples of the finest chintzes of Kashmir, due to the care and taste of Mr. Purdon Clarke, and, with the portrait-models of representative soldiers and native officers of the Indian Army standing round on guard,—models made under the supervision of Lieut.-Colonel Coker—was, *prior to the opening* of the exhibition, regarded as one of the most realistic scenes of India to be found in the Exhibition. All this has been spoilt by some over-officious Vandal placing in the body of the hall four large glass cases containing models of the P. & O. Steamers, which block up the vestibule, to the inconvenience of the sight-seers, and

completely destroy the Indian effect the scene was intended to convey, by their incongruous presence.

Space will not permit me to say more about amusements, excepting that everybody who comes to town should go and see the *Pickpocket* at the Globe, one of the best farcical comedies now being played. Concerning Mr. William Holland's out-door theatre at the Albert Palace, Battersea, I can only reiterate his advice, "Go and see it." Mr. Charles Wyndham (of whose acting in *Wild Oats* I shall have to say something more next month) in conjunction with Mr. David James and Mr. Edward Righton, is nightly delighting crowded audiences. The character of Rover is a rôle admirably adapted to Mr. Wyndham's light, vivacious, and impulsive style.

"FURLOUGH."

Reviews.

EVENTS IN THE LIFE OF CHARLES GEORGE GORDON. By HENRY WILLIAM GORDON. London: Messrs Kegan Paul, Trench & Co.

This may be said to complete the series of works describing the career of General Gordon, linking as it does the various books together with fresh facts and original comment, and preparing the ground for the future history of the life of the Hero of Khartoum. Sir Henry Gordon sheds considerable light on many episodes in his career, and gives a number of fresh anecdotes, letters, and opinions, which render the volume full of interest. Thirty maps and plans facilitate the perusal of the work, which from beginning to end is never dull, and is a valuable addition to the literature dealing with General Gordon. That the more his personal life is known and appreciated, the greater will be the purifying effect of his example on the British army is a view we have already once expressed, and we can only add that this appreciation of his greatness will be most effectually aided by the present volume.

ELEMENTARY MILITARY TOPOGRAPHY. By Captain J. DEMANGEL. Yorktown, Surrey: Mr. W. Webb.

This well-compiled and well-printed manual of elementary military topography is chiefly intended for beginners, but contains somewhat more than the matter usually provided for such, and extreme care has been displayed by the author in making his instruction as clear and as intelligible as possible. It is divided into four parts; map-reading, map-drawing, military sketching and reconnaissance, very judiciously arranged, and illustrated by excellent diagrams. We have gone through the work very carefully, and can confidently recommend it as a model book of the kind.

THE LADIES' PARADISE. By EMILE ZOLA. London: Messrs. VIZETELLY & Co.

The sequel to *Piping Hot* has gone through fifty editions in France, and will doubtless run through many in England, describing as it does the struggle between retail tradesmen and the stores of to-day, which is quite as acute in Paris as in London. Zola's marvellous descriptive powers were never better displayed than in his account of Octave Mouret's gigantic establishment. If not so intense in its dramatic interest as *Germinal*, it is far ahead of any recent English novel we could name.

CÉSAR BIROTTEAU. By HONORÉ DE BALZAC. London: Messrs. Routledge & Sons.

The enterprise displayed by Messrs. Routledge in placing within reach of every Englishman a cheap well-printed issue of the novels of Balzac, merits the warmest commendation. Among them, one of the most fascinating is the rise and fall of César Birotteau, which the translator has rendered into English in a masterly manner. Those who sigh for the times when Dickens and Thackeray were issuing their masterpieces, and happen to be ignorant of Balzac, should turn to this series, wherein they will find an amount of enjoyment no one looks for now-a-days from the average English novel. One has only to read a single work, to long ardently to read the whole series.

HOW TO LEARN RUSSIAN. By HENRY RIOLA. London: Messrs. Trübner & Co.

The steps recently taken by the Indian Government and the War Office to promote the study of Russia in England, has called attention afresh to Riola's manual for students of Russian, based upon the Ollendorffian system of teaching languages, which promises to come into extensive request. It is carefully compiled and clearly arranged, and can be safely recommended as one of the best of its kind either in English or any other Western language.

ANNA KARENINA. By Count LEO TOLSTOI. New York: Thomas T. CROWELL & Co.

While, for military and political purposes, the study of Russian is being pursued in this country, stimulated by the persistent exhortations of Charles Marvin, the language appears to be in vogue

in America at the present moment, in order that the masterpieces of Russian fiction may be placed before a public in search of something new. Among the best of Russian novelists Tolstoi occupies a foremost place, while *Anna Karenina* yields to none of his writings in dramatic intensity and graphic force. English military men will find in it interesting sketches of Russian military life; and the descriptions of the Russian peasant, as he is, are, in our opinion, more valuable and accurate than any of the accounts of Mackenzie Wallace. The translation is an admirable one, and the book is got up with such care and taste, that the series of Russian novels projected by Messrs. Crowell should secure on this side of the Atlantic the wide circulation they amply deserve.

WANDERINGS IN CHINA. By C. F. GORDON CUMMING. London: Messrs. Blackwood & Sons.

This is really a most entertaining work on the "Heathen Chinese" by one of the most accomplished writers of the day. It is full of sound information, graphic writing, and opinions worth thinking over, and presents a vigorous contrast to certain works by certain lady writers, which, in spite of the notoriety secured them by the social position of the authors, are, to men who know the world, and there are few officers who do not, mere books of twaddle. Her descriptions are full of vivacity and humour, and, no matter on what she touches—the ways of the people, their mode of life, the scenery of the country, and daily life in the towns, she is always charming. In recommending the work, we would call special attention to the illustrations, which are the best we have seen for a long time.

A NARRATIVE OF MILITARY SERVICE. By General HAZEN. Boston, U.S.A.: Messrs. Ticknor & Co.

In a solid volume, illustrated by excellent portraits and maps, General Hazen has furnished a valuable contribution to the literature of the Civil War in America. Starting with the battle of Shiloh, he carries the reader through the operations on the Stone River, the battle of Chickamauga, the capture of Mission Ridge, the Atlanta campaign, the battle of Jonesboro', the march to the sea, the South Carolina campaign, the burning of Columbia, and the North Carolina campaign. His description of what occurred is very spirited, and marked by a commendable fairness of tone. Thanks to this, and to a continued interest in the military problems of the day, the chapter he adds on the "Lessons of the War" is of

particular interest to military men, and there are few who will not gather a number of useful ideas from General Hazen's remarks. We wish similar accounts of our own wars were more common.

LORD WOLSELEY. By CHARLES R. LOW. London: Messrs. Richard Bentley & Son.

This is a new, cheap edition of Low's excellent life of Lord Wolseley; well printed and got up, and provided with an admirable portrait of the hero. The objection has been raised that Low's biography is a little too flattering; but, without stopping to discuss this point in detail, we think that few can deny that for copiousness of facts, accurate description, and graphic force, the life is decidedly a good one. It is not easy to convict the author of colouring his facts, although it would not be difficult to point out that in places his laudatory deductions are somewhat exaggerated.

OUTLINES OF MILITARY HISTORY. By Colonel O. R. MIDDLETON. London: Messrs. Mitchell & Co.

To the many officers who write indifferent novels or commonplace books of travel, in order to win a reputation, Colonel Middleton has set a good example in preparing a solid volume, containing a concise account of the principal campaigns in Europe between the years 1740 and 1870, including all commonly referred to in English military text-books. The work is admirably compiled, and represents a vast amount of research and condensation. The maps, which exceed a hundred, are a specially valuable feature of the book. We congratulate the author on the successful completion of a task which must have occupied a vast amount of time, and trust that the work will receive the fullest appreciation by all interested in the art of war, as well as those whose special studies will compel them to resort to it.

JUDGED BY APPEARANCES. By ELEANOR LLOYD. London Literary Society.

A story of the civil wars, written in an ingenious unaffected style, which is very charming after the high-flown narratives historical romancists have been giving to the world too freely of late. The plot is good, the characters are well drawn, and, altogether, the reader lays down the book ready to start afresh with another by the same author, which, perhaps, is the happiest effect that can be produced.

THE MODERNISED TEMPLETON. By W. S. HUTTON. Messrs. Crosby, Lockwood & Co.

For nearly thirty years Templeton's *Mechanics' Workshops Companion* has been exceedingly popular, and, edition after edition having been exhausted, the publishers entrusted the talented author of the *Works Manager's Handbook* with the task of bringing the book up to date. Copious additions have been made without inconveniently swelling the book, and it may be fairly claimed for it that, in spite of many rivals, it enjoys the same pre-eminence it did when Templeton compiled it thirty years ago.

ATLAS.

From Messrs. W. & A. K. Johnston, of Edinburgh and London, we have received the *Cosmographic Atlas*, certainly one of the best and cheapest of the day. It contains forty political maps, ten historical ones, three physical maps, and nearly a dozen scriptural and astronomical maps, with explanatory letterpress and alphabetical index. In the new edition just issued the maps and the letterpress have been brought up to date, and for clearness and comprehensiveness it leaves nothing to be desired. The atlas is strongly bound, and is altogether well adapted for military and naval libraries.

MINOR NOTICES.

We have also received a well-compiled *Guide to the Examinations in Tactics for Officers of the Auxiliary Forces*, by Captain LOMAX (Glasgow: David Robertson & Co.); a *Mode of Keeping Accounts of a Regimental Pay Office*, by Major CREIGHTON (Abergavenny: Messrs. Seargeant Brothers), which may be commended as a model book of the kind; and a *Catechism of Military Training*, compiled by Major H. FITZ-ROY MARRYAT (Chatham: Gale & Polden).

TO CORRESPONDENTS.

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It is requested that ruled paper be used, the pages numbered, fastened together, and a small margin left.

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Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.

THE ARMY AND NAVY MAGAZINE.

AUGUST 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 214.)

In the face of the great weight of warlike events in these modern times so soon as the cannon thunder, politics retreat more and more into the background. In the wars of the previous century the Powers, even when open hostilities had already commenced, almost always retained a portion of their armies in their hand for engagement elsewhere, and politics decided whether the stake should be increased or not.* Now from the very outset everything is staked, and the lot of war must fall as destiny wills.

Politics regain their influence only so soon as it is felt that, in the case of one of the belligerents, the desire for peace begins to prevail over his desire for continuing the struggle, and that all hope of the success of his arms is dying away. It will then be for politics to bring about a *rapprochement* under which both parties can arrive at an understanding respecting the end of the struggle. The influence of third Powers, too, must not be lost out of sight. It frequently determines how far the victor may proceed in his demands, and how far and to what extent the vanquished must give way.

In the last stages of a war, when the issue and decision by arms is no longer doubtful, the *military* element naturally makes way more and more for the *political*. The effect of politics frequently makes itself immediately felt in the decisions of the commander-in-chief. Political considerations may, under certain circumstances,

* The diplomatic intercourse between hostile parties even still continues; for example, the English Minister in St. Petersburg was not recalled during the whole of the Seven Years War.

bring about a battle which, although no longer necessary from a purely military point of view, is regarded on the one side as a last attempt, and on the other as final means of coercion. One of the belligerents, perchance, does not desire this final decision for its own sake. A weak Government requires it in order to explain to its own people the necessity for peace, even when it had no longer hopes of victory. What marvellous fruits the interference of politics at the end of a war may still bring forth, is seen in 1871, when the armistice was concluded, whilst on one part of the theatre of war the struggle was still being carried on; just like two fencers who have been separated before their courage has cooled down.

War serves politics both before and after. War annihilation and destruction is in these days inconceivable. A valuable end and aim that is of permanent value to the State, be it only a question of ascendancy, must be existent; and this can only arise from political considerations.

The conclusion of a war is so important and will be of such lasting effect upon the exertions which nations make to attain it, that we ought, almost on that account alone, to place policy at the head of the conditions of success. Now, as we have here pointed out, many motives are also attendant, and thus we may without hesitation lay down a maxim that *without a good policy a successful war is not probable*. War will, on that account, be in no way degraded in importance nor restricted in its independence, if only the commander-in-chief and the leading statesmen are both clear that war, under all circumstances, serves politics *best by completely defeating the enemy*. By attention paid to this maxim, not only is the greatest liberty assured to politics, but, at the same time, the widest scope is allowed the employment of the combative forces.

How heartily politics and war ought to co-operate is manifest. This leads us again to the conviction that a State is best situated when its commander-in-chief and statesman are united in the person of a great king.

We have said that every good military organisation has a definite national character. The same is also true of the energy of the general and his troops. Whoever writes upon strategy and tactics ought not to omit treating of *national* strategy and tactics; for only these latter can be of real service to his nation.

Like the individual who, as a rule, only achieves something great in life if he comes to his right position, so must also armies be in their proper element in order to show themselves in

their best light. The Prussian Grenadiers, who without dismay advanced in parade-step up to the enemy's batteries, lost at Jena their presence of mind, when they saw themselves confronted by French *tirailleurs*, whose fire they could not resist. Napoleon's armies, which marched victorious through the heart of Europe, could not suppress the Spanish insurrection. Our infantry, which advanced victoriously through the rain of the French *tirailleur* fire and performed the most difficult feats which have in modern times ever been required of troops, would, if transplanted to the theatre of war in Acheen, Ashanti, or Zululand, most probably at first require some experience in order to be complete masters of the situation.

Our modern German mode of battle aims at being entirely a final struggle, which we conceive of as being inseparable from an unsparing offensive. An offensive idea is tacitly at the root of theoretical speculation, and, for the most part, of all practice also. Temporising, waiting, and a calm defensive, are very unsympathetic to our nature. Our corps of officers are trained to spontaneous activity, to take the initiative, and to aim at positive successes. Everything means action. Our strength lies in the great decisions upon the battle-field. In the year 1870 there were combined in the nature of the country, as well as in the nature of our own forces and those of the enemy, all the conditions precedent to such a mode of operation, and hence the brilliant successes. When we find a similar state of things again, we shall, at all times, in the future also achieve more than if doomed to long waiting in the field and camp, or driven to drag on a resultless defensive.

Turks and Spaniards, in modern times, have displayed most heroic and obstinate defence behind walls and ramparts, and every army boasts of its own peculiarities according to its traditions, training, and mode of life, and the special sphere in which it is especially at home. If it is compelled to relinquish it, its serviceableness is, usually, gone. The improvised armies of the French September Republic of 1870, displayed a right respectable resistance behind hedgerows, plantations, hills, and forests on the Sarthe; but in open attack upon our position on the Lisaine they effected but little. They were distinctly not made for the offensive, which was forced upon them by higher authorities and the consideration of Paris.

The feeling of not being quite in one's element, and having to combat against unusual difficulties and unknown impediments, is of quite as prejudicial effect upon troops as upon individual men.

We must, therefore, count among conditions of success the fact that a *rôle* must be assigned to an army that suits its peculiarities. The commander-in-chief has not always that to give, but he ought to make it his aim, where circumstances possibly permit, to give effect, to the utmost extent, to the *national mode of fighting*, whether it be bound up with some material disadvantages or not.

An important condition for the happy issue of a war is a good *internal disposition* of the army. Every regiment brings into the field with it a certain character (see p. 52). But it can, in spite of this, display great deviations from it, and be the slave of unintelligible paroxysms. Discipline does not exercise an absolute power over internal emotions, effects of fright and disaster, or singularly unfavourable coincidences. We could as little strike the word "panic" out of a military work as heroism or contempt of death.

The will to conquer is, in the case of the commander-in-chief, as also in that of his troops, of paramount importance. Victory and defeat are not separated so widely from each other as an examination that has been passed, or not passed. The line between the two is very variable. Those troops which will not retire from the ground that is their battle-field are at last regarded as victorious, even though the greater material losses are on their side. In this obstinate will to remain victors there is, for the most part, seen the spirit that animates the army. The impressions of the life of peace and of war that have preceded, here co-operate to produce a great moral exertion. The pride and the self-consciousness of the army, founded upon good traditions and successful generalship, secure success even under the most trying circumstances.

Besides these moral factors, material ones are also essential. A happy equilibrium in respect of both keeps the capacity to perform exploits longest alive, and this best guarantees a successful issue.

One of the most important of the material conditions is, at all events, a sufficient *number of warriors*. He who has numerical superiority has, at all events, the first right to expect success. A French proverb says, *Le Bon Dieu est toujours avec les gros escadrons*, and history teaches us the like. In these modern times, when a shock does not, as it did at the time of "line-tactics," decide the day, but when the forces mutually consume each other in a constant struggle, a sufficient number of troops is of double importance. A superfluity of numbers guarantees the possibility of holding the enemy in check with equal forces, and

then with the rest; that are not confronted by him, of proceeding, without more ado, to his destruction.

A clever strategist will often understand how to paralyse the whole force of the enemy with a smaller portion of his own troops, either by boldness deceiving him as to his strength, or by inducing him to attempt a very difficult feat, and one that requires much strength. And then, where the number of warriors is on both sides only equal, the surplus may be utilised at a decisive point which brings in good interest, whilst the enemy has put out his capital to bad interest. Economy must be practised here. We exercise, in such a case, a wise *economy of our forces*, in which a new condition of success is assured. It can partially, if not entirely, replace a deficiency of resources. When we speak of the importance of numbers in war we do not, of course, compare a large and bad army with a small good one, but always two armies which are equally balanced in point of efficiency. That numbers can only equalise deficient efficiency in a certain proportion, is a matter of course; and we would not speak of it unless the theory of the value of numbers was not, as a rule, opposed by the maxim that not numbers, but the spirit animating an army, is its strength. In the winter campaign of 1870-71 we were shown that even a three-fold numerical superiority, composed of young undisciplined troops of the French Republic, was not sufficient to counterbalance the greater military efficiency of the Germans. Brave but deficiently organised and trained troops, when engaged in a struggle with well-disciplined ones, gain in weakness from the unwieldiness that arises from their numbers. Dissimilar things can never be brought into arithmetical comparison, and no sensible man, on seeing three rams confronted by a lion, would speak of the superiority of the first.

Clausewitz draws from the circumstance that Frederick the Great at Kolin could not succeed with 30,000 men against 50,000 Austrians, nor Napoleon at Leipzig with 160,000 men against 280,000 allies, the conclusion that in our modern Europe it is very hard even for the most determined general to wrest the victory from an enemy of double the strength. "If we see the double number of warriors place their weight in the scale against the shrewdest generals, we must not doubt that, in ordinary cases, both in great and small engagements, a considerable superiority, which need not, however, exceed the double, would be sufficient to ensure victory, no matter how disadvantageous such circumstances may be. Of course we can conceive of a pass, where ten times the numbers would not be sufficient to succeed; but in such a case we cannot speak of a battle at all."

The mode of fighting has since that time wrought no change in this respect, and we must even to-day take Clausewitz's computation as correct.

Hence proceeds, therefore, the first principle of modern strategy, which is *to show oneself, at the critical point, as strong as possible*. To dispute the value of numbers is equivalent to denying this universally recognised principle.

Armament, in like manner, contributes very materially to success. The bravest soldiers with lances and swords could effect little against breech-loaders and rifled cannon. There can certainly never be a complete disproportion between armaments and behaviour of an army, because in the latter there is intelligence, which takes the place of good weapons. But untimely parsimony, technical mistakes, or obstinacy and false pride, which will not allow a weapon once declared to be good to be discarded, can, considering the rapid progress of our times, be productive of considerable inequalities. An armament corresponding to all the demands of the times is, on that account, all the more important, because the want of it immediately re-acts upon the *confidence* of the soldier. Nothing is worse than if he feels himself neglected in this respect and believes himself, without his own fault, obliged to succumb to a fire which he cannot resist. A defeat appears thus excusable, and success cannot be worse damaged than by this feeling.

Of course we include, when dealing with weapons, an understanding of their proper use, otherwise the effect would not correspond with the value of the machine.

The *forms of fighting* are also of importance. By force of habit they enter into the flesh and blood of soldiers; and if they fail when used in serious earnest, they cause more despondency than ought to be permitted to such motives. Forms of fighting are laid down by the *Reglements*. It is accordingly necessary that in them practicability should be the first essential. If only considerations of the "beauty" of military dramas, or a consideration of a faithful preservation of what traditional prevail, the troops will, after their first experience of war, lose confidence and feel themselves insecure.

As we have now spoken of wealth of combatants and resources, we must now, in justice, allow of *wealth generally* being considered to be a condition of success.

To war belongs money, money and again money. Our modern wars, with their principle of the unreserved use of all available resources, are not conceivable apart from the modern mode of raising

money by loans. The army of a Great Power upon a war-footing costs each day from one and a half to two million "thalers." No State in the world is rich enough to store up a treasure which could for many years in succession pay for its maintenance. This can only be done by its credit. On the other side, one may say, with a certain show of justice, that so long as a State possesses credit, its defeat is not final. If Germany puts its whole organised defensive force in the field, it has about one and a half million men under arms out of a population of forty-six million souls. There remain always many behind in the country, who, in the case of necessity, could bear arms to defend their fatherland.* Similar is the ratio in the case of the other Great Powers, and we may assume that the material resources at the disposal of the executive power will sooner be exhausted than human forces. Whoever has weapons and money is not, as a rule, defenceless.

A very valuable pledge of final success is possessed by the party that can continue a campaign for great length of time.

Money will not of itself alone be decisive, but the greater ease or difficulty of making use of it will. States which, in the event of war, have the sea open to them, have at the disposal of their credit quite different channels to those whose harbours have been blockaded. The former are in a position to make use of foreign industry for equipping new armies. Without these resources the Government of National Defence in the last Franco-German war would never have raised the great masses of troops by which it astonished the world. Had Napoleon in 1814 been in a similar situation, the course of the war would have been different. The Southern States, in the American War of Secession, succumbed in spite of their greater military skill and efficiency, so soon as their transmaritime traffic was cut off from them. The rule of the waves is, therefore, immediately productive of a greater strength, even when the fleets are not in a position to support directly the operations of the land forces.

If wealth gives great strength it will, all the same, only be fruitful if the people are willing to make sacrifices betimes. That sacrifices made late are not able to retrieve what has been neglected at the proper time, was taught Carthage by the fate of Hannibal, and it paid for its error with the loss of its freedom. Material and

* Scharnhorst takes every fifteenth soul as a warrior, and states that the K r-fuerstenthum Hannover had even in the year 1759 every fifteenth man in the country in the field, and, in spite of this, kept its regiments up to their full strength until 1762. According to this ratio, Germany must now possess more than three million combatants.

ethical motives work here also in concert, motives which can never be separated in the operations of war.

Now, in conclusion, all those conditions of success ought to be stated which are to be sought in the practical employment of the combatant forces. They will, however, be best explained in the following chapter, when treating of the various phases of evolutions and battle.

IV.—EVOLUTIONS AND BATTLE.

1.—*General Remarks.*

EVOLUTIONS and battle are, in these days, still judged of by the light of the victorious campaigns of 1866, 1870, and 1871; for the Russo-Turkish war of 1877-1878 took place under extraordinary circumstances. Owing to the nature of the theatre of hostilities, and the bad communications between it and the base of operations, as well as to the insufficient preparations made by both sides, there were phenomena met with in the Balkan peninsula as well as in Armenia, which remind us of far older stages in the development of war. Protracted waiting in strong positions, combined with operations against the enemy's rear lines of communication, recall to us the time and period of the Seven Years' War.

As it could be perceived at the first glance that the frequent halting and the disconnected nature of the operations were produced here by special causes, so does there still live in our conception of a future campaign the picture of rapidly-progressing operations, the idea of decisions upon a battle-field following one another uninterruptedly, and of a rapid penetration deep into the heart of the enemy's country, as well as of a rapidly resulting and propitious peace. Such was the case in 1866, and so also it was in 1870; and thus do we hope it will be in the future.

The principles are therein expressed according to which good leadership should always aim at ending each new war. This does not, however, necessitate that its external form should again be the old one. In spite of all circumspection on the part of the generals on the Prussian side, the war in 1866 would perhaps have taken another course, had they not been supported by the greater internal efficiency of their troops, as well as by the superiority of their weapons. In the year 1870, in the first period of the war, our superiority in numbers, and in the second period the little efficiency of the enemy's armies, were of extraordinary assistance to us. Operations like the attack upon the lines of Amanvillers on the 18th August 1870, could not have been brought to

such a successful issue as was the case, had not 200,000 Germans been opposed to 180,000 French. The defence of the position behind the Lisaine and Allaine, four German miles in extent, which General Von Werder took in order to protect the besieging army before Belfort, would not have been attempted with 40,000 men against a three-fold superiority in numbers, had these latter consisted of good troops. It was only because the defenders had to deal with an improvised army of the enemy that the undertaking was rendered possible.

At the present day France, Austria, Italy, and Russia have eagerly followed the lead of Germany with regard to the training of their soldiers. The internal efficiency of the troops of all nations will tend each day to become more equalised, and at last they will attain a like *niveau*, though at the moment this may be a good way off.

Before 1866 it was difficult to form a correct estimate of the Prussian army and its actual strength, for it had been trained in quiet and secret exercise in the barrack-yards, on the exercise ground, and field of manœuvres. Two mighty wars have now convinced the world, and have made it familiar with the advantages possessed by our military system, which they had formerly not perceived. We shall not a second time surprise them with it, but shall find them prepared for the peculiarities of our mode of fighting. It is yet very surprising that in France, in spite of manifold imitations of Germany institutions, no one appears to think of waging a future war in the way in which we have latterly done; they apparently intend to go their own way.

The obstinacy of resistance, and the wealth and resources on the part of the defender, can, under certain circumstances, paralyse even the boldest and most energetic attack. An obstinate defence, prepared at great expense of science and practical organization, it is, accordingly, to which our former enemies have directed their attention. From a French book, which appeared a few years back, treating of the war of the future, we extract these words: "As yet we French are not strong enough to vanquish the Germans in their own land, but we shall defeat them with ease in our territory." We have pointed to the new building of fortifications in France in the last decade. The eastern frontier has been provided with a belt of forts and strongholds, which only show but few gaps, and these can easily be explained by certain military intentions. The problem of closing all roads upon which it would be possible to penetrate into the country from the east and north-east has been almost solved.

Now, we do not desire Germany to follow suit in these innovations, out of consideration for the expense and the weakness which would be entailed upon the army by having to detach garrisons from the army. However, other Powers, to whom the defensive is more necessary, and who are richer than we are, may aptly take such precautions for their protection.

In ancient times we find an analogy for this. It lies in the frontier fortifications of the Romans, the value of which was seen for centuries. Such phenomena are wont to recur because the secret internal causes are the same. The actual effect of every systematic fortification of a country is this, that it deprives strategy altogether of its mobility; not that it only gives the engineer an opportunity of thrusting himself more than hitherto into the foreground. We know how much an army requires in order to live and to be provided with all necessaries, especially ammunition. It is not so necessary for the armies themselves, as for their system of commissariat, that the principal roads and railways should be kept open. A Franco-German war in the present day would accordingly begin with a number of battles around fortifications. If the girdle of forts on the frontier were broken through, a chain of fortified encampments would lend new support to the defence, and again hinder the mobility of the assailant. The latter, with his rear lines of communication, is bound to the point where he has broken through, and that would be of more moment, because at the same time the slow progress of the armies renders it difficult for them to live from the supplies of the theatre of war. In a report which the French General de Rivière made to the Legislatif Body, touching the new building of fortifications on the frontier, he declared that it was their intention to compel the Germans, in a future war, to take a definite direction on their march into the country. It has accordingly, on the French side, not only been perceived that the principal superiority of the Germans lay in their *war of movements*, but that it was difficult for France to catch us up quickly enough in it, because this would require an express training and education on the part of all her generals. Initiative and independence play here the greatest part, and these will not permit of being inoculated into a person in a short time, but require the labour of years; and so they determined to renounce them, and to deprive the Germans of their element, barring roads and bridges by impregnable forts and forcing upon them a battle within a narrow space.

As to the best way of overcoming these new impediments, opinions will be widely divergent, so long as they have not been put

to a practical test. One favours a defensive on the Rhine, in order not to come too close to the prickly necklace of the hill forts. A second is for storming; that is, passing over the troublesome paragraphs, and simply proceeding to the business of the day. A third would like to penetrate through between the forts and leave the reserves in the rear to take them, in order thus to thrust aside the whole question. A fourth considers a short siege sufficient; a fifth holds a thorough siege to be absolutely necessary.

In truth, the means and method of attacking will vary according to the circumstances of the attacking army, and even according to the inclination of its leaders. Pauses in the operations, and interruptions in the advance must, at all events, ensue, and these do not only directly entail loss of time, but also allow the defender the possibility of bringing up reinforcements and so protracting the resistance; and thus there comes in a second element, necessitating delay. There is no doubt at all that war, where it has to reckon with such fortificatory works, will for a time be of a dilatory character.

In the East of Europe—although even there grand fortress works are spoken of—matters are at present different. Broad plains lie open for the continuous march of military events. But the vast extent of the countries, and the little perfection of the network of railways, would be productive of similar phenomena; for instance, periodical halts, either until the rear communications are again restored, or until a better time of year has arrived for the resumption of operations. A war in the East, at all events, would not be decided in a single campaign, but only after a number of campaigns.*

If, accordingly, in a future war the leadership of our armies is just as circumspect, and the bravery of our soldiers and generals as great as hitherto, we must at the same time be perfectly clear as to the fact that it will not be possible to conceive of a similarly rapid course, and like fortunate and rapid results, as in 1866 and 1870. As King Frederick after the battle of Lowositz wrote to the bold Marshal Schwerin, "We do not find the old Austrian," so shall we, at the beginning of a future war, be obliged to confess, "We do not find our old foes more."

It is certainly of service to make that clear to ourselves, in order that we may not enter upon a future war with false ideas. Disap-

* Properly speaking, therefore, it is only Germany that furnishes a suitable theatre for an energetic war to be brought rapidly to an issue. But it is, on that account, also our endeavour that it shall never again be the arena of war, but that it shall fight out all its quarrels outside its own frontiers.

pointment would doubtless follow these illusions, and this might shock the confidence of the troops in the leadership, whilst the slow course of events is quite in the nature of things. The labour will, in the future, be, under all circumstances, more difficult, and the reward at first far scantier.

The element of mobility in war is, moreover, confronted by the enormous increase in the masses of troops. Millions cannot be tossed hither and thither like thousands. Before all, they cannot exist so easily as these, wherever they turn themselves; and their employment is dependent upon greater considerations.

Of the campaign of 1866, it has been recorded that each of the columns with which General Benedek marched from Moravia into Bohemia was not less than fifteen German miles long. It would accordingly, as the crow flies, extend from Berlin to Magdeburg, from Stuttgart to Anspach or Würzburg, and from Munich to Regensburg; and yet, in comparison with modern numbers, it was not at all great. It consisted of three army corps and a division of cavalry, about 90,000 combatants, which do not play any great rôle in the numbers of the present. And it was in no way negligence in the troops that they extended so far. Our treatise upon the strength and composition of an army corps has, moreover, already taught us that a combatant army, like the one referred to, requires actually fifteen miles of a single road in order to move along.

This instance presents us with a clear picture of the scale upon which things are done in modern wars; and the picture can be easily completed. Let us set the present German army in march upon a road. Of the cavalry divisions, which we here place at the head, each would stretch two-thirds of a German mile in length. Then follow the army corps. Even if all the corps were to close up in marching order, so that rank follows rank, and waggon after waggon, yet, in order to make secure, we should be obliged to cover 100 German miles for all the eighteen. And then the numerous reserves, which march with them into the field, must be taken into account. Besides these, the *ober-kommandos*, with their staffs and train; further, the army administration department, so far as it is not included in the army corps, and much more besides. To our astonishment, a computation of the whole together would show us that if the head of the column was marching into Mayence upon the Frankfort road, the last company would only just be leaving Eydtkuhnen, upon the Russian frontier. The whole military road from the Rhine to the Russian frontier would have been thickly crowded with soldiers, guns, and transports. If these

were made to pass out through a single gateway, day and night, it would take a fortnight for all to pass through.

Such masses of troops, when collected, would, of course, fill whole provinces. The Austrian army of 1866 required almost the whole of the Margraviate of Moravia to quarter it, and the troops that were quartered furthest south had to make nine successive marches before they reached the leaders. In the year 1870 ten German army corps, collected on the Rhine, covered 120 square miles of a very fruitful country. For the whole of our present German army more than 200 square miles of country would be required, in order to quarter them, even though every place were full of troops.

Enormous also would be the front which the gigantic armies of to-day would present were they developed in one single line. The French army would reach from Epinal to Verdun. The individual regiments would in no way be loosely ranged behind one another, but would, as no inconsiderable tracts of country are occupied by fortifications, be pressed fairly closely together. The attacker would, accordingly, scarcely find space for rapid and surprising evolutions, for flank movements and unexpected attacks. Only the preliminary battles, which deceive as to real intentions and cause the enemy to collect either here or there, and to relinquish certain portions of his line, bring the necessary freedom of action. It is sufficient to present to our minds these dimensions, that sound almost incredible, in order clearly to conceive that, especially for the first phases of war, the element of mobility must be small.

Splitting up into different armies, reserves, and distinct groups for the accomplishment of subordinate tasks, to a certain extent remedies the evil; but the individual portions are still great and unwieldy enough.

If we take the armies in their composition which we have recognised as being practical, the strongest would then consist of six army corps and three divisions of cavalry. If, when this army was assembled on the theatre of war, a portion of the troops—that is to say, two corps—were to be taken as a support, and planted behind the front, and another portion, perhaps a cavalry division, were detached on other service, there would still be left four army corps for the first line of battle. Each army corps requires, in order to develop itself properly, a good half a German mile of space.*

* *Blume on Strategy*, pages 161-62, takes the normal fighting-breadth of an infantry battalion at about 200, of a cavalry regiment at about 800, of a battery at 190, of artillery and infantry at about 400, of a corps of artillery at, at least, 700;

This measure was confirmed by the experience of the great battles in the French war. According to these, each individual army of the greatest strength ought to have two German miles of front; but upon the wings the line of battle is somewhat looser. Commanding points which lie on the side are drawn into the position. The cavalry divisions show freer action, being pushed out beyond the wings right and left; if they are reckoned also, the front is considerably wider. The artillery of the corps in reserve will, in the main, be also drawn into the line of battle, and again this line extends considerably. But, of course, the strength of an army in the course of the war diminishes by losses on the march and in battle; but that only affects the infantry, the lines of artillery remain almost always the same.*

The two and a half miles (German) of front line for our greatest, and half of this for the smallest armies, consisting of three army corps and one to two divisions of cavalry, appears, under all circumstances, to be a right proportion. On the 18th August 1870, the 7th, 8th, and 9th corps of Guards, and the Saxon army corps fought side by side on an extent of two miles (German). Into this line were pushed, certainly, on the evening of the day, the second part of the 3rd and 10th German army corps; yet the ranks were so thinned in the front by losses and diminution of all sorts, that room was naturally made. But days of battle, when the troops are unusually closely pressed together, are exceptions. Never at any other time, not even in the closest bivouac, are the army corps ever so close together. Woods, meadows, bogs, and water are excluded just as are the parts swept by the fire of the enemy's fortifications; and thus, as a matter of fact, the sphere of the theatre of war may, under certain circumstances, be inconveniently restricted. The Franco-German frontier has, for example, only just room enough to enable the two armies to develop themselves properly.

Though the principles of modern warfare may demand the most rapid decisions, and though, perhaps, these principles may, immediately after the outbreak of the struggle, lead at once to bloody battles, it is yet probable that the whole result will show itself as a severe struggle, in which the combating armies, if followed on the map, either move but little from the spot, or, in comparison

the whole of the artillery and cavalry of an army corps at more than 1,500 metres; whence would result, for an infantry division, 1,500 metres, and for an army corps 4,000 metres normal front.

* Some losses in guns, which cannot be immediately replaced, may happen; but considering the great number of the artillery taken into the field, they are of little moment.

to the spaces to be covered, make but very insignificant progress. Only when, after the greatest exertions have been made on both sides, a crisis supervenes, and is followed on the one side by inevitable exhaustion, do events begin to move more rapidly. *Certain it is that a war in the immediate future must lose much of the mobility which was peculiar to our last campaign.*

The picture of the gigantic combatant masses will, at the same time, explain the statement that the duties of the supreme command of an army have become more thorny than they ever were; with such columns on the march, such tracts of country and such fronts, many things must naturally withdraw themselves from the supreme control. Leadership finds them as they are, and must bow to the unchangeable. The cheap critical wisdom, that so easily finds what has been done *inconceivable*, would be very reticent were it only for once to carry out in detail the sketch here referred to, and reflect what great difficulties must arise under the military conditions of modern days.

The telegraph, which connects the commander-in-chief in most cases with the troops under his command, may, it is true, overcome both time and space, but it cannot equalise the diversity of views.

Owing to the fact that the masses of troops on the march must spread themselves in great breadth, the number of opportunities for an accidental collision of certain parts with the enemy increases. Whenever a battle results herefrom, the neighbouring troops rush from both sides to help. An issue takes place at a spot where it was not wanted, and in an hour when it was not expected; it therefore comes to pass, that, just in respect of what is most important in war, in regard to action and battle, the supreme command is least of all free, and most of all dependent upon a foreign will, viz. upon accident. Almost regularly, in this respect, will it have to deal with *faits accomplis*, and find the battle already far advanced when it first receives news of it.

This small power of the highest commanders as to when the tactical decision shall arise, is a particularly difficult element of modern warfare. The best intentions of the commander-in-chief are often baffled, and his most correct computations brought to nought.

It will be replied, that the will of the commander-in-chief is known to all his under-commanders, and that obedience must present such incompatibilities. But as it is impossible to command beforehand, or to forbid beforehand, everything in the field, the

individual must act just where the ray of light lights up for a moment a part of the gloom. The worst that could happen would be, if generals and officers out of anxiety, for fear of going wrong, were always ready to wait to see what orders would be issued from the highest instance. All favourable opportunities must then be lost, and the enemy left the upper hand at the outset.

Yes, even in the few cases in which great decisions are known and provided for, as on the days of St. Privat and Sedan, even then it is only free to the commander-in-chief, for that specific battle, to bring the masses of troops upon the enemy in the direction in which they shall work. More than this there is but little for him to do, except to say, with Mark Antony,—

Now let it work : Mischief, thou art afoot,
Take thou what course thou wilt.

When six, eight, and ten army corps, with just as many hundreds of guns, fight between woods, rocks, hills, valleys and villages, and the smoke of the powder rolls in thick clouds over the combatants, the picture is too minute for a single eye to control exactly the progress of all events, so as to enable only one will to be the ruling power. The course of a great battle, to conduct which is the most difficult task which can possibly fall to the lot of human genius, presents itself to us as being more, than are operations, the product of many wills and intelligences, to which the supreme instance merely denotes the direction converging towards the ends to be attained.

2.—The Importance of Discipline for Evolutions and Battle.

Whoever will present to his mind the size of our modern armies, will ask himself how it is possible to lead such masses ; the reply is, that discipline makes them moveable and guideable. There is no better solution of the problem. But the word "discipline" embraces so many interpretations, that its meaning appears not very definite and to need a more precise explanation.

By it is usually understood that discipline and order that is maintained by the punctual application of a strict law. Yet one must oppose to it the fact that the vigour of laws and discipline and order in no wise advance in like ratio. There have never been armies that were better disciplined than the Germans were during the last campaigns. In spite of that, there were applied the mildest laws with which great martial hosts ever at any time in history entered on the field of battle. These laws were, moreover, applied in the most humane manner against the offender.

This fact is vouched for by many examples of ancient and modern history, when Draconic severity and want of discipline, each undiminished, went side by side for a long time. The French Republic of the 4th of September 1870 had a bullet ready for every disobedient soldier, and in their armies military executions were no extraordinary occurrences; yet, all the same, their discipline was, and remained, loose at bottom. The actual condition of things was a natural one. All laws arise primarily from the existing state of things, and only in later times re-act upon them again.

But, on the other side, we must not believe that in a civilised people, discipline is a matter of course, that it simply proceeds from a civil code of morals. For this the tests applied to it are too hard. In the army of a civilised people crimes must, under all circumstances, be more rare than among the hosts of a rude tribe. But discipline demands more than mere negative services. She demands of the soldier that he stakes his life in order to vanquish the enemy, she expects from him something extraordinary, and she makes this extraordinary demand so familiar to him that he considers it unavoidable, and more than this—even natural.

The best explanation for discipline and its marvellous power is found in the saying of Darwin, contained in his *Descent of Man*: "The superiority which disciplined soldiers show over undisciplined masses is primarily the consequence of the confidence which each has in his comrades." This unconditional confidence is, beyond all doubt, the prime means by which discipline works, and it allows the peculiarity of that to be plainly perceived which we understand under this much employed word.

First of all, a law is necessary which is rigorous enough to make the fulfilment of all higher commands appear something unavoidable; "The power of the passions cannot be restricted without the help of law," is a saying of Scharnhorst. Disobedience, whenever it shows itself, must be promptly and sufficiently punished. It would be a fatal illusion were we to consider the rigorous enforcement of the law to be something with which we could dispense. This is the skeleton for the building up of discipline. It is of permanent effect upon the troops that the necessity of obedience for high and low in the army is regarded equal. Example is of far more effect than is a written or a spoken word. As the soldier sees his superiors obey, so does he also follow their lead. Subservience to a superior, who commands something at the moment is not all. Before all else this obedience must be shown to the *service itself*. There cannot be aught more holy for the soldier

than the requirements of his profession. Simple duties are more easily understood by the private soldier than by the higher.*

The seriousness with which, since old days in the German army, so-called small duty, "*Der kleine Dienst*," are performed, is in no wise merely the result of tradition or unfruitful pedantry; it pursues the ethical aim of creating in the soldier an idea of his duty, in a manner best suited to his intellectual faculties. This faithfulness in what is little, must certainly not confine itself merely to military life on parade; but the many unapparent things which demand that the warrior shall be trained up like a man, deserve also, and are especially entitled to, notice. Enforced cleanliness, love of order, punctuality, carefulness, love of truth, and thorough reliability, all work most powerfully for the maintenance of discipline.

Hitherto the custom has been adhered to, that to the officers of regiments are assigned a part of the little administration duties; for example, the clothing and provisioning of the soldiery. Economical considerations are not here taken into account; but the object is to make the intercourse between superiors and subordinates intimate, and to strengthen the influence of the first. Work in the clothing department, in the quarters of his soldiers, and in superintending cellar and kitchen, made the captain of a company the corner pillar of discipline, and the father of his troops; and it is a significant expression of a naive feeling, that the soldier prefers to call him "*Den Alten*," although he sees every day officers of greater age, rule, and command, in higher positions.

This peculiarity in the life of the German army has, besides the idea of the necessity of a faithful fulfilment of duty, produced a feeling of most perfect familiarity. Therein hitherto lay its strength. In common and serious work the most cordial relationship has arisen between officers and soldiers.

Every man in the ranks knows from experience that his officer does not, under any circumstances, leave the company in which he stands and that his company is like a family with the same interests, and that it will hold together like a family, dauntless in the hour of danger and distress. Thence springs that confidence of which Darwin speaks, and in which the great scientist of human nature finds the superiority of disciplined armies. With compo-

* Hence the value of the institution that the officer, in our army, begins his career just like a private soldier. He must first learn to obey, in order to be able later to command, that is, in a correct manner, and in one that can be understood by the simple senses of the private man. Moreover he here learns the lowest duties, which are far removed from him later, but according to the understanding of which he is still materially judged of by his subordinates.

sure the soldier presents his breast to the bullets of the enemy, because he is convinced that his shoulder comrade does the same, and that his commanders are ahead of him, and he dare not leave them in the lurch.

This internal power, that is exercised by a feeling of relationship, lasts when the order produced by law fails, because the excitement and confusion of battle render control impossible. Duty and honour unite then in the heart of the soldier, in the firm resolve not to remain behind his fellows.

For this reason, in our last wars, each division of the army dared unhesitatingly to attack an enemy of superior numbers, whenever it appeared to be advantageous for the whole, or the moment offered a favourable opportunity. Every general who made a bold venture was sure that the corps nearest him would rush to his assistance so soon as they heard the cannon thunder, and that the work, so well begun by him, would be accomplished, in a case of necessity, by his fellows, if his own strength should not suffice. Down to the youngest officer, at the head of his battery, all commanders could so think and so act. It is apparent what an increase of strength thus accrued to the German army throughout. We can also conceive, from this, how the supreme command, in spite of its limited influence upon the course of actions and battles, was yet enabled to enter into these issues with equal confidence. It knew full well that, although the ways were different, all the unfettered forces were striving in common zeal towards the one end, namely, to come up to the enemy. It might be convinced that no commander that was still able to reach it would remain away from the bloody struggle. The discipline of the German army guaranteed this.

This is accordingly really the means of making armies mobile. The more numerous they are, the more efficient must discipline be. We are accordingly more in need of it now than ever; but it must be correctly conceived of, if it is to prove itself strong. It must be identical with the complete community of all members in their ideal aims, in the fidelity of duty and devotion to their king and country.

If, accordingly, the basis for the good discipline of an army must be mainly looked for in the province of morals, yet to maintain it purely external moments must not be disregarded. We ignore the fact that intolerable conditions in times of war, exertions which exceed all human strength, the overpowering impressions of battle, and want and distress, can, at last, destroy the best discipline in the world, and that, before all things, objectless

hardships and losses have a demoralising effect. Important conditions lie in organisation. The first is, that in war the ordinary bonds obtaining in peace shall find careful consideration. If these be rent asunder, discipline is, under all circumstances, injured; and the disadvantage which here arises will almost always outweigh the advantages which a distribution into a greater number of unities could possibly bring.*

In the family life of our troops is the tearing asunder of these bonds especially impracticable. It lies in the internal constitution of our army, that every colonel places more confidence in, and exercises more influence upon, his *own* regiment and battalion, and each captain upon his *own* company or squadron, than upon strange troops that have only been assigned to him on the outbreak of war. On the other hand, the private soldier obeys his well-known superiors more willingly than those who are strange to him. Due consideration for the unions that are actually existing is a matter of such urgency that all subordinate considerations of how they shall be employed and used in battle may be disregarded. As a rule we may assume that in war a regiment composed of three battalions will be able to perform considerably more than three battalions composed at random of different regiments, which were only assigned to one man *ad hoc*.

Should divisions be at random composed of different army corps, provincial diversities have also sometimes to be reckoned with. One race in the German army requires to be dealt with rigorously, and another with leniency; the one requires to be treated with rigour, and the other in a friendly manner. This one is spurred on by reproach administered at the right time, and another is fired most by generous praise. Between the Berliner, or Brandenburger, and the Westphalian, between the East Prussian and the Rhineländer, there is considerable difference of character. The commander of the troops in war must know them in their life of peace; he must know how he has "to take them."

Of great importance for the maintenance of discipline is it that those soldiers, who after serving their time with the colours return to their civil life, are in case of war summoned to the same regiment in which they have received their military training. They find here their old acquaintances, comrades, and superiors again, with whom they can easily get on, and find conditions to which they were once on a time accustomed, and into which they

* It is known how much the discipline in the Danish army was damaged by the decision of the Minister of War, before the campaign of 1864, to divide up all the battalions in order to gain a double number of battalions for the war.

again quickly enter. They find a pleasure in the reputation and the well-being of this their particular community, and feel a pride in belonging to it. *Espirit de corps* animates them, producing a noble rivalry with other regiments.

Naturally it cannot be possible, on account of the manifold considerations to which mobilisation gives rise, to arrange matters in every case so that each man summoned to the army shall be included in his old union, but it should always be done as far as is possible.

Tradition and *esprit de corps* can only develop when officers in one and the same regiment do not change too frequently; particularly this is the case with the "chefs" of companies, squadrons, and batteries, in whose hands the training of their men lies. Further, the several regiments and bodies of troops must not be weakened too much in their peace strength. The body must be considerably large if a definite tradition is to live in it.*

Then large numbers of troops are indispensable for various training-purposes. Too weak peace companies and battalions lose their independence. In their exercises they cannot represent and execute what companies and battalions in war have to perform. The dangerous expedient must therefore be resorted to of combining several and assigning them to one of the commanders in charge. We meet with a similar state of things in France; but hereby the fundamental principle of training, discipline, and order would, in our case, be broken through; that principle that consists in every superior being personally responsible for the condition of his regiment. Personal interest, personal influence, and, as a natural consequence, discipline too, would be diminished.

Another kind of discipline is also requisite; this, in contrast to the moral, might be called the intellectual. If intelligence is allowed to work in an army without rule, it renders command uncommonly difficult; this has often been the misfortune of improvised armies.

In militia and volunteers that are called out in the hour of danger there is, generally speaking, no lack of talented and educated men among their commanders. The best men in the nation, who would otherwise not have devoted their energies to military service, must, under such circumstances, obey the summons. The armies of the French September Republic numbered many members of the highest aristocracy in their lower ranks, and here there was certainly no lack of intelligence; but it was

* See Blume's *Strategy, on Training Troops*, p. 67.

certainly an undisciplined intelligence, which lacked uniform training, and thus action lacked unity.

This latter is guaranteed by a uniform training. By this we do not mean that the sphere of a commander's activity must be systematised according to definite rules. War is impatient of schedules, but there must be a certain harmony in the manner of performing these tasks. And this is obtained by individual and general principles being engrafted into the flesh and blood of the commanders of the troops by teaching and training. They must be adduced in the rules as being leading principles for action; as is the case in the *Directiven* for special war emergencies. Leadership must not be without a strict schooling; only thus is it possible that a certain task shall be performed by all officers upon whom it may be imposed, and that not after one single fashion, but on similar principles. In the case of theoretical problems that are given in peace time, solutions are wont to show great diversities; but they have been purposely so devised as tests, with a view to their producing doubts in the minds of those upon whom they are imposed. In war everything proceeds much more simply. When, in the year 1870, the German armies massed on the Rhine, it would have been difficult to have found a single general who would not have decided to take the offensive at once against France. To employ our superiority in numbers, and the efficiency of our troops in a vigorous and rapid offensive, was the feeling of each one of us. We had imbibed this principle with the air of our military school.

If such discipline of the intelligence exists, the commander may, with composure, leave much to the independence of the individual. He will be certain that, where he cannot personally control matters, perhaps just that what he would have done will not take place, but that something practical will be done, and in harmony with his intention.

Uniformity in mental training will, moreover, only be possible where the whole staff of officers is socially upon the same footing. It is, of course, wanting in armies whose corps of officers have partly risen from the ranks and partly from military schools and academies; among such a perfect unity of action will never be assured.

(To be continued.)

The Royal Navy.

FROM THE ACCESSION OF H.M. THE QUEEN.

By ROBERT O'BYRNE, Barrister-at-Law, F.R.G.S.

(Continued from page 177.)

CHAPTER II.—OFFICERS AND MEN.

ON the accession of Her Majesty to the throne in 1837, the Royal Navy was represented in the higher grades of officers—with which ranks our space this month will only allow us to deal—by 6 Admirals of the Red, 8 of the White, and 12 of the Blue; 13 Vice-Admirals of the Red, 13 of the White, and 18 of the Blue; 16 Rear-Admirals of the Red, 17 of the White, and 25 of the Blue; making a total of 128 Flag Officers.

Of Captains on the Active List there were 750, Commanders 823, and Lieutenants 2,994.

Of these officers 11 only out of 128 Flag Officers were employed, 59 out of 750 Captains, 68 out of 823 Commanders, and 424 out of 2,994 Lieutenants.

It should be here observed that up to the year 1837 no promotions had been made to the Flag List since 1830; and in the year preceding 1837, up to June 20th, 27 officers only were promoted to post rank; 29 to rank of Commander, and 87 to rank of Lieutenant.

Under this state of stagnation, both as to employment and promotion, it became an urgent necessity for the Board of Admiralty to devise some scheme which should relieve the Active Lists of the Service from their plethoric condition. As a step in this direction a commission was appointed in 1840 to inquire into the condition of promotion and retirement, which made its report on the 10th of August of that year.

With respect to the Flag List, the Commissioners pointed out the necessity of rescinding so much of the Order in Council of the

30th June 1827 as related to the promotion of Captains to be Flag officers, and that those officers who had been placed on the retired list, under that Order in Council, should be placed on the List of Flag Officers, according to their seniority as Captains. That in all promotion every Captain whose seniority brought him in turn for advancement should be placed on the List of Flag Officers, provided he had served, or offered to serve, as a Captain, and had not declined service at any time when called upon, and that there was nothing against his character as an officer and a gentleman; but that the half-pay of those Flag Officers who had not commanded one or more rated ships four complete years during peace, or five complete years of war and peace combined, should not be increased beyond that of Rear-Admiral, unless they should have rendered, as Flag Officers, sea service of equal length to complete the period above mentioned, of which they were deficient as Captains.

That those Captains who were not considered eligible for promotion should be removed from the List of Officers of the Royal Navy, and receive a civil pension equal to their half-pay, to be provided for in the Navy Estimates, and that their widows should be considered eligible for pensions (£90 per annum as Captains' widows), according to such regulation as might be in force.

With respect to Commanders, the Commissioners suggested that 50 of the Senior Commanders on the list should have the option of receiving the retired rank of Captain, with the pay of 10s. 6d. a day, being the lowest rate of half-pay allowed to a Captain, and that they should be placed on a separate list as Retired Captains; and that they further suggest that the widows of these Retired Captains should be entitled to receive at their husbands' death pensions of £75 a year, if otherwise entitled thereto.

Lieutenants of seven years' standing in that rank, being Senior Lieutenants of sea-going ships, or in command of any naval ship, should receive 11s. a day, and others 10s. a day; the extra pay of sixpence a day allowed to all Flag Lieutenants being discontinued. Half-pay should be 4s. a day, to be increased to 5s. after three years' service in sea-going ships as Lieutenants, advancing by seniority to six and seven shillings a day.

On the 24th of April 1847 the Admiralty, having had under their consideration the growing insufficiency of the Admiral's List, arising from the advanced age of officers filling the highest rank in the service, an evil necessarily increasing from year to year, and being of opinion that the only mode of effecting this object, of bringing officers still in possession of health and vigour nearer to the Flag, would be by the honourable retirement of those at the

head of the Captains' List, thus opening the succession to the highest ranks of younger men, adopted the following plan of the 200 Captains above referred to.

1stly.—The rank of Retired Rear-Admiral to be given by seniority to such applicants from the 14s. 6d. navy pay-list as would be willing to accept it, with the pay of £1 5s 0d. a day and a corresponding pension to their widows, under the usual restrictions.

2ndly.—An addition of 7s. 6d. a day to be given to applicants by seniority, from the 12s. 6d. and 10s. 6d. half-pay lists, being Captains of not less than 20 years' standing, and 55 years of age. Officers from both lists to be permitted to assume the title of Retired Rear-Admiral, at the period when they would have obtained the Flag by seniority had they remained on the Active List. Their widows to be entitled to a pension of £110 a year and to the pensions of Rear-Admirals' widows when the rank of Retired Rear-Admiral had been obtained.

3rdly. The vacancies upon the £1 list to be filled up in turn of seniority, by officers accepting the 18s. a day; but no new admissions to the £1 5s. list to be made until reduced below the number of 25, a total not to be exceeded afterwards. The permanent Retired List to be reduced to 100, by making one appointment for every two vacancies, the first 25 officers on the list receiving £1 5s. per day, and the remaining 75 £1 per day, with the right of assuming the rank of Retired Rear-Admiral when entitled to it by seniority.

4thly. The Active List of Captains not permanently to exceed 500, a proportionate reduction to be made in the 14s. 6d. and 12s. 6d. lists, the first to consist of 70 Captains, and the latter of 100.

5thly. Good-service pensions to be retained by Captains, until they reach the rank of Rear-Admiral or Retired Rear-Admiral.

6thly. The promotions from the Captains' List and the Admirals' List in future to be continuous, reserving always the undoubted right of the Crown to select officers for promotion to the higher as well as to the lower ranks, whenever the public interest requires such an exercise of prerogative.

7thly.—The Admirals' List not permanently to exceed 150 in number, and to be thus distributed: 30 Admirals, or 10 of each squadron; 45 Vice-Admirals, or 15 of each squadron; and 75 Rear-Admirals, or 25 of each squadron.

8thly.—This plan to come into operation from the 1st of October 1847.

From 1847 to 1851 the condition of naval officers is untouched. On the 25th of June of the latter year a new Order in Council makes its appearance.

Dealing in the first place with the Flag Officers, the number of these is reduced to 99, exclusive of the 3 Admirals of the Fleet, a new rank representing Field-Marshal in the army. Of these 99 Admirals, 21 are to be Admirals, 27 Vice-Admirals, and 51 Rear-Admirals, this reduction to be effected as follows :—

1stly.—By removing to a Reserve Half-Pay List the officers on the Active List who had not served at sea for their flag under the Order in Council of 30th November 1827, these officers to receive the half-pay of Rear-Admirals, but to be allowed the same advantage of rising in rank as if they had remained on the Active List.

2ndly.—By awarding ten Retired Service Pensions of £150 each to such Flag Officers as were either above seventy years of age, or physically incapacitated for further active service, such officers to be placed on the Reserved List, and the vacancies occasioned by death to be filled up from the Active List; these pensions, however, not to be held in addition to the Good Service Pension. As, however, instances may occur in which there may be candidates on the Active List for the said pension of £150 a year, no promotions were to be made from the Captains to the Flag List, but the vacancy or vacancies occurring on the Pension List to be kept open till filled up by qualified candidates from the Active Flag List.

As related to Captains on the Active List, the number to be reduced to 350 on the following plan :—

1stly.—As vacancies occur in the Active List of Flag Officers, by promoting the Captain first in seniority who has served for his Flag, reserving the right of selection. Officers risen to their Flags, who had not so served, to be placed on a Reserved Half-Pay List, rising in rank, but with the half-pay only of Rear-Admirals.

2ndly.—By retaining the retirement of 1846 at the number of 200, to be effected by permitting officers above fifty-five years of age, and Captains of ten years' standing, to be eligible for retirement; this retirement to be kept at 200 till the List of Captains was reduced to 350, the Retired List to be then diminished by retiring only one in two vacancies until the number be reduced to 100.

3rdly.—By observing the rule of promotion, as in force, of promoting one officer in three vacancies (except in special and individual cases) until the number be reduced to 350.

Notwithstanding the objection entertained by the Admiralty to all brevet promotions, the Board, desirous of meeting the claims of

old officers who had served long and well, and who sought their promotion rather as a reward for past services than in the expectation of further employment, adopted a principle of selection by which 50 Commanders should be promoted to the rank of Captain and placed on the Reserved Half-Pay List; of these 50, 20 were selected in 1851, and 10 in each succeeding year, till the number had reached 50, when vacancies only were to be filled up.

As related to Commanders on the Active List, the number was to be reduced to 450 on the following terms:—

1stly.—By selecting 50 Commanders to be Captains as already observed.

2ndly.—By increasing to 100 the List of Commanders promoted to the rank of Retired Captains under the Order in Council of 10th August 1840, and keeping open such Retirement until the number of Commanders on the Active List was reduced to 450.

3rdly.—By removing to a Reserved Half-Pay List all commanders who had not served afloat, or in the packet or revenue services, within twenty years, or who were physically incapacitated for further service, and by continuing from time to time to remove such officers from the Active List; such officers, however, thus placed on Reserved Half-Pay to be allowed to retain all the advantages which they would have enjoyed of rising in pay or rank, or of receiving the Greenwich out-pension.

Like the promotion of 50 Commanders to the rank of Captain, in lieu of brevet promotion, 50 Lieutenants were to be allowed to be promoted by selection to the rank of Commander, to be placed on the Reserved Half-Pay List. By adhering to the rule of one promotion for every three vacancies (except in special and individual cases) the number of Commanders on the Active List would be reduced to the required 450.

The number of Lieutenants was to be reduced to 1,200, as follows:—

1stly.—By promoting 50 Lieutenants by selection.

2ndly.—By placing on the Reserved Half-Pay List all Lieutenants who had not served afloat, or in the packet or revenue services, within twenty years; Lieutenants physically unfit for service; and by removing, from time to time, such officers from the Active to the Reserve Half-Pay List, reserving to them, however, as in the case of Commanders, all the advantages they enjoyed of rising in pay or rank, or of receiving the Greenwich out-pension.

3rdly.—By keeping up the rate of one promotion out of 3 vacancies (except in special and individual cases) until the total number of Lieutenants was reduced to 1,200.

On the 3rd of January 1856 a new scale of pay for Captains was introduced. Instead of being payed, as hitherto, according to the rate of the ship in which they may be serving, to be paid according to their seniority on the list of Captains, on the following scale. The first 70 Captains, when employed, to be paid £701 2s. 1d.; the next 100 £574 17s. 6d., and the rest £450 8s. 4d.

Under the same date as the preceding paragraph we find a further extension made of the Retired and Reserved Lists for Commanders and Lieutenants. It being found that up to this period the operation of the several Orders in Council had been less satisfactory in its result than in the case of the retirement of officers of other ranks, the following regulations were made :—

1stly.—The List of Captains on the Reserved List, established by O. C. 25th June 1851, was increased from 50 to 100 by selecting from the Active List of Commanders a number not exceeding 15 in each succeeding year, till the number of 100 was complete, when vacancies only were to be filled up.

2ndly.—The List of Retired Captains established under O. C. 10th August 1840, and increased by O. C. 25th June 1851, to be increased temporarily from 100 to 250, and permanently to 200. To effect this subsequent reduction one out of two vacancies were only to be filled up till the list was reduced to 200, when vacancies should be filled up as occurring. The result of this measure not only extended the boon of promotion to 150 officers, who, after having served the country long and faithfully, were now old and unable to serve, but by their removal to the Retired List of Captains raised a corresponding number of Commanders to a higher rate of half-pay to which they were justly entitled.

Further, with regard to the retirement of officers of the rank of Lieutenant, and adverting more especially to the O. C. of June 25th, 1851, which established a Reserved List of 50 Commanders to be selected from the List of Lieutenants; it was now ordered that the list of 50 be increased to 100, such increase to be effected by selecting from the List of Lieutenants a number not exceeding fifteen in each succeeding year till the number of 100 be completed, when the vacancies only were to be filled up.

Lastly, the O. C. determined that, as the age of the Lieutenants who during the previous ten years had been promoted to the rank of Commander for good service in the Coastguard, or in command of revenue cruisers, averaged 55 years, in future such officers should be promoted to the Reserved List only in individual cases in which, on the special recommendation of the Comptroller

General of the Coastguard, it might be thought desirable to retain the services of the officer so recommended by promoting him to the Active List.

On the 7th of May 1858 Retired Rear-Admirals (1847) were granted the advantage of rising to higher grades.

On the 1st of August 1860 the subject of the retirement and retired-pay of Captains, Commanders, and Lieutenants, half-pay of Lieutenants, and the Greenwich out-pension, came under further revision.

First, as relates to Captains :—

All Captains who had attained the age of sixty without having served in their present rank were placed on a Retired List and received retired pay as follows : If on 10s. 6d. half-pay list when retired to receive 18s. per diem ; if on the 12s. 6d. or 14s. 6d. lists, 20s. per diem ; such officers to assume the rank and title of Rear-Admiral at the time they would have obtained that rank by seniority had they remained on the Active List. Captains who may arrive at the head of the List without having served in that rank to be placed on the List of Reserved Flag-Officers, with the pay of 20s. per diem. These regulations were not compulsory upon officers on the 14s. 6d. list.

Second, as relates to Commanders :—

All Commanders on the Active List who had not been employed afloat, in command of revenue vessels, or the Coastguard, or as mail or transport agents, within a period of fifteen years, to be placed on a Retired List, and to receive retired pay according to their amount of sea service as follows : Under 9 years total service in the rank of Commander and Lieutenant, the half-pay they were receiving at the time they were retired ; above 9 years and less than 12 years, 10s. 6d. per diem ; above 12 years and under 15, 12s. 6d. ; above 15 years and under 20, 14s. 6d. ; above 20 years, 16s. 6d. ; such officers to be permitted to assume the rank and title of Retired Captain on reaching the age of 60, but without further addition to their retired pay. Officers, after 20 years' service in these ranks, and rendered incapable for further service, to be eligible for the retirement, irrespective of age, at the discretion of the Board of Admiralty. Commanders promoted to the Reserved List of Captains under the O. C.'s. of 2nd June 1851 and 30th June 1856 were entitled to increase of pay on the above scale, according to their length of service.

Third, as relates to Lieutenants :—

All Lieutenants on the Active List who had not been employed

either afloat or in the Coastguard, in command of revenue vessels, or as mail or transport agents, within a period of fifteen years, to be placed on a Retired List, and to receive pay as follows: Under 6 years' service, the half-pay they may be receiving at the time when retired; above 6 years and less than 9, 7s. per diem; above 9 years and less than 12, 8s. 6d.; above 12 years and less than 15, 10s.; above 15 years, 11s. 6d.; such officers being permitted to assume the rank and title of Retired Commander on attaining the age of sixty, but without further addition to their retired pay. Officers after 20 years' service in this rank, or physically incapacitated for service, to be eligible for retirement with the rank and title of Retired Commander, irrespective of age, at the discretion of the Board. Lieutenants who had been promoted to the Reserved List of Commanders under the O. C.'s. of 25th June 1851 and 30th January 1856, were entitled to increase of pay on the above scale, according to their length of service.

The half-pay of Lieutenants was by this Order of Council (1st August 1860), fixed on the following scale: Under 3 years' sea-time 4s. per diem; above 3 years, 5s.; above 6 years, 6s.; above 9 years, 7s.; above 12 years, 8s. 6d.

By this order all officers on the Active List who accepted the out-pension of Greenwich Hospital to be placed on the Retired List of the rank held at retirement, and to be permitted to assume a step in rank on reaching the age of sixty, but without farther increase of pay.

The retirement of Captains, Commanders, and Lieutenants becomes the subject of another Order in Council dated 9th July 1864.

Under this order the number of Captains on the Active List was further reduced from 350 to 300. That the system of placing on a Retired List all Captains who may, from time to time, attain the age of sixty without having served in that rank, be extended to Captains who may attain the age of sixty, and have served a portion of but not the full sea time required to qualify them for promotion to the Active List of Flag Officers, such officers to receive retired pay as follows:—If on the 10s. 6d. Half-Pay List when retired, 18s. per diem; if on the 12s. 6d. or 14s. 6d. Lists, 20s., such officers to assume the rank and title of Rear-Admiral at the time they would have obtained their flag by seniority had they remained on the Active List, and then to receive Retired Pay at the rate of 25s. per diem, provided they shall have completed one year's service at sea in the rank of Captain. That the above system of retirement be extended to Captains of fifty-five years

of age. When the Active List shall have been reduced to 300, no Captain to be eligible for retirement who has not been five years on the list. That Captains found physically unfit for service be allowed, at the discretion of the Board, to retire, irrespective of age, at the several rates of 18s. or 20s. a day, according to their standing on the list, provided they shall have served at sea in the ranks of Lieutenant, Commander, and Captain a combined period of fifteen years; and, if less than that period, at the rate of 16s. a day. A further limited power was granted to the Board to allow a limited number of Captains who had attained the age of fifty, and who were not desirous of further employment, to retire on the foregoing conditions; when, however, the Active List of Captains had been reduced to 300, this exceptional authority was to cease. Captains, arrived at their turn for promotion to the Flag List, without having served the time required to qualify them for the Active Flags, were to be placed on the List of Reserved Rear-Admirals. These officers, and also such officers as may, under the provisions of the Order in Council of 1st August 1860 have been already promoted to the Reserved Flag List, to be allowed pay at the rate of 25s. a day.

The Active List of Commanders to be reduced from 450 to 400. The existing system of placing on the Retired List, under the conditions specified in the Order in Council of 1st August 1860, all Commanders who had not served within a period of fifteen years, to be extended to Commanders who had not been so employed to ten years; such officers, and officers of Greenwich Hospital of similar rank, to be permitted to assume the rank and title of Retired Captain on reaching the age of sixty, or on attaining fifteen years' seniority on the List of Commanders, and to receive, on their retirement, pay provided for in the same Order in Council with this difference only, that officers who shall in future retire, shall reckon their service in the Coastguard on shore, or Transport Service on shore, as half the same period served at sea. That the same plan of retirement, with its corresponding benefits of rank and retired pay, be extended to Commanders who may have attained the age fifty-five.

The Active List of Lieutenants to be reduced from 1,200 to 1,000. Lieutenants, who have completed fifteen years' service in that rank, and who have attained the age of forty-five, to be allowed to retire with the rank of Retired Commander, such officers to receive retired pay, and their widows to be allowed pensions on the scale provided for by the Order in Council of 1st August 1860, with this difference only, that such officers as

shall in future retire shall reckon their service in the Coastguard on shore, or Transport Service on shore, as half the same period served at sea. Lieutenants on the Reserved or Retired List may in future be retired under the Order in Council of 1st August 1860, and Lieutenants of Greenwich Hospital be allowed to assume the rank of Retired Commander on attaining fifteen years' seniority, but without any increase of half-pay or Widow's Pension, beyond that authorised by the Orders in Council under which they were respectively retired. Lieutenants rising to a position which, had they continued on the Active List, would have entitled them to any higher rate of half-pay, are exempted from the provisions of the Order in Council of 1st August 1860, and awarded the same amount of retired pay as if their position had not been disturbed by those provisions.

On the 24th of March 1866, the retirement of Flag Officers and Captains, and the consequent reduction of the Active List, are made the subject of another Order in Council.

By this Council compulsory retirement is extended to all the executive lists. Admirals to be retired on attaining seventy years of age, or when physically unfit for service; Vice-Admirals similarly on attaining the age of sixty-eight, and Rear-Admirals of the age of sixty-five.

Flag Officers on the Active List at the time of the issue of this Order in Council, who may be retired under these regulations, retained all the privileges of rising in rank and pay to which they were then entitled, but no Flag Officer who had not hoisted his flag would be considered eligible for the appointment of Vice and Rear Admirals, or for promotion to the rank of Admiral of the Fleet. By this Order in Council the Active Flag List was ordered to be reduced to 85; 21 Admirals and Admirals of the Fleet, the latter never to exceed 8 in number; 22 Vice-Admirals; 42 Rear-Admirals. This reduction was to be made gradually, by only filling up two out of every three vacancies caused by the removal of Flag Officers who accept Greenwich Pensions, and by retirement from age, whether optional or compulsory. Vacancies from all other causes to be filled up as they occur. Vacancies on the List of Flag Officers on Reserved Half-Pay in receipt of service pensions, and on the List of Flag Officers of Greenwich Hospital *not* to be filled up. Flag Officers on the Active List who had not hoisted their Flags, or been employed at the Admiralty since their promotion to Flag Rank, were allowed to retain their places on the Active List, should they prefer it; but they might be placed on the Retired List at their own request, with the

consent of the Admiralty. Officers coming on the Flag List after the date of this Council (24th March 1866) would be subject to compulsory retirement at the ages specified above, whether they had served or not.

Captains on the Active List to be retired on attaining sixty years of age, or when physically unfit for service, on the terms of the Order in Council of 9th July 1864. Those on the Active List in 1866 (March 24th), who, before attaining the age of sixty, should have served the necessary time to qualify them for promotion to the active Flag List, were allowed to retain their place on the Active List, if they should prefer it; but no Captain would be eligible for promotion to the Active List after sixty years of age, or if physically unfit for service. Captains of sixty years of age who had served the necessary time to qualify them for promotion to the Active Flag List, and who remained on the Captains' List until promoted to Rear-Admiral, to be placed on the Retired List, but to be allowed to rise by seniority to the rank and pay of Vice-Admiral and Admiral respectively. Captains who had served their time, but who retired voluntarily, before reaching the top of the List, were not entitled to rise to higher pay as Flag Officers than 25s. a day, in accordance with the Order in Council of 9th July 1864. Captains who had not served their time for Active Flag rank, and who had been unemployed for 10 years, to be retired on the terms of the Order in Council of 9th July 1864. Captains to be allowed to retire on attaining fifty years of age with the consent of the Admiralty on the terms of the same Order in Council. The Captains' List to be reduced gradually to 250 by filling up only two out of every three vacancies caused by age retirements from the List, whether optional or compulsory. Vacancies from all other causes to be filled up as they occur.

Commanders under this Order in Council (24th March 1866) had to retire at the age of fifty-five, or when physically unfit, and allowed to retire at fifty with the consent of the Admiralty.

Lieutenants had to retire at fifty-five, and were allowed to do so at forty-five under the same conditions as above.

A particular favour was allowed under this Order in Council. Time served by Naval Officers in future retiring from Civil employments connected with the Navy, which did not entitle them to Civil Superannuation, was allowed to reckon towards increase of half or retired pay in proportion of one year for every two served in that capacity. In the case of Captains, 12 years served in such civil capacity would entitle an officer to rise to the higher rates of retired pay of Vice-Admirals and Admirals respectively.

A curious Order in Council was issued about this time, touching the reckoning of time served in command of Harbour Ships on Foreign Stations as sea time. By this it was ordered that in the case of Captains who commanded Harbour Ships on Foreign Stations, and who, at the same time, had superintendence and conduct of the duties of such foreign port, the time so served should be considered as sea-service time.

On the 27th of June 1867 we again find the subject of Officers' Retirement treated in an Order in Council of that date, which provides for the advancement of Reserved Captains and Qualified Captains to Reserved List. By this Order it was enacted that an immediate advancement should be made of so many of the Reserved Captains who had qualified as would complete the List established by the Order in Council of 1847, to the number of 100, and the subsequent advancement of the remaining Qualified Captains on the Reserved List, in the order of their seniority, as vacancies occur.

The 22nd February 1870 is a red-letter day in the annals of the Royal Navy.

It appears that the Admiralty, having had under their consideration the state of the Active Lists of Flag Officers, Captains, Commanders, and Lieutenants, and the regulations in force governing the retirement of these Officers, were now of opinion that, notwithstanding the reductions effected by means of the successive schemes of retirement, of which we have so fully treated already, the List still exceeded in number the requirements of the service, and that it had become necessary, with the view of increasing the efficiency of Officers by securing for them more frequent employment, that an extended and more comprehensive scheme of compulsory and voluntary retirement should be made, and ruled as follows:—

1stly.—In relation to Flag Officers.

The Admiral of the Fleet to be retired at the age of 70. Admirals and Vice-Admirals at the age of 65, or at any age so soon as 10 years have elapsed since their flag was hauled down, or (if they have not hoisted their flags) since their service as Captains ceased. Rear-Admirals to be retired at the age of 60, or any age subject to the above conditions. Admirals and Vice-Admirals to have the option of retiring at the age of 60, and Rear-Admirals at the age of 55. The Active Flag-List to be reduced to 50 (Admirals of the Fleet 3, Admirals 7, Vice-Admirals 15, Rear-Admirals 25). Admirals of the Fleet to receive on retirement the half-pay of their rank, and to be styled "Retired Admirals of the Fleet." Admirals, Vice-Admirals, and Rear-

Admirals to be allowed, on retirement, to receive, at their option, either the half-pay of the rank from which they retire, or the retired pay provided by these regulations. Admirals of the Fleet to be selected from the Admirals on the Active List who have served as Commander-in-Chief, or who have commanded at sea, as Flag-Officer for two years. Vice-Admirals to rise to the rank and title of Admiral on the Active List, according to seniority. Rear-Admirals not to be eligible for promotion to the rank of Vice-Admiral until they have completed one year's sea-service, or its equivalent in harbour-service as Flag Officers; but such officers as arrive at their turn for promotion without completing the qualifying service and not having attained the age of retirement, to remain on the Active List until qualified for promotion, or until retired; if promoted, to take rank according to former seniority. Vice-Admirals retired from that rank to be entitled to rise by seniority to the rank of Retired Admirals. Rear-Admirals retired from that rank to be entitled to rise by seniority to the rank of Retired Vice-Admiral, if before retirement they had served the time to qualify them for promotion.

2ndly.—In relation to Captains.

Captains to be retired at the age of 55, or at any age if seven years have elapsed since they last served. Captains to have the option of retiring at the age of 50, and to be retired irrespective of age if found physically incapacitated. The Active List to be reduced to 150; 1st Class, 50; 2nd Class, 50; 3rd Class, 50. Captains to be allowed, on retirement, to receive at their option either the active half-pay of that rank, or the retired pay provided by these regulations. The retired pay for Captains under O. C.'s 1st August 1860, 9th July 1864, and 24th March 1866, is abolished subject to temporary provisions. To qualify a Captain whose seniority brings him, in turn, for advancement to the Active List of Flag-Officers, he must have completed six years' sea service as Captain, or its equivalent in harbour service; but the first three years of such period must be sea service in command of a ship of war at sea; such officers as arrive at their turn of promotion without having completed the qualifying service to be retired. Captains retired from that rank to be entitled to rise by seniority to the rank of Retired Rear-Admiral, if before retirement they had served the time to qualify them for promotion.

3rdly.—In relation to Commanders.

Commanders to be retired at the age of fifty, or at any age if five years have elapsed since they last served. To have the option of retiring at the age of 45, and to be retired irrespective

of age if found physically unfit. The Active List to be reduced to 200. Commanders to be allowed on retirement to receive at their option either the half-pay of that rank, or the retired pay provided by these regulations. The retired-pay for Commanders under O. C.'s (1st August 1860, 9th July 1864, and 24th March 1866, is abolished subject to temporary provisions. To qualify a Commander for promotion to the rank of Captain on the Active List he must have completed two years' sea service as Commander, or its equivalent in harbour service; but one year of such service must be sea service in a ship of war at sea. A Commander may be promoted to the rank of Captain for gallantry in action, provided he has completed one year's sea service, or its equivalent in the rank of Commander. Commanders retired from that rank may by permission (obtained at the time of their retirement, but not subsequently) rise one step in rank, if, before retirement, they had served the time to qualify them for promotion.

4thly.—In relation to Lieutenants.

Lieutenants to be retired at the age of 45, or at any age if five years have elapsed since they last served. To have the option of retiring at the age of 40, and to be retired irrespective of age if found physically unfit. The Active List to be reduced to 600. Lieutenants to be allowed, on retirement, to receive, at their option, either the active half-pay they may have earned by service, or the retired pay provided by these regulations. A number of Lieutenants, not exceeding ten annually, being under 40 years of age, may, with consent, and under such regulations as it may be thought fit to make, retire upon the active half-pay they have earned by service. The retired pay for Lieutenants, provided for by O. C.'s of 1860, 1864, and 1866 is abolished, subject to temporary provisions. To qualify a Lieutenant for promotion to the rank of Commander on the Active List, he must have completed four years' sea service as Lieutenant, or its equivalent in harbour service; but three years of such period must be sea service in a ship of war at sea. This rule applies also to promotion granted by Flag Officers on striking their flags. A Lieutenant may be promoted to the rank of Commander for gallantry in action, provided he has completed two years' sea service, or its equivalent as a Lieutenant. Lieutenants to reckon on service in the rank of Sub-Lieutenant and Acting Sub-Lieutenant towards increase of half-pay in the following proportions: Under 3 years' service as Lieutenants, 1 year of service as Sub or Acting Sub-Lieutenant; under 6 years, 2 years; above 6 years all service as Sub or Acting Sub-Lieutenant. Lieutenants retired from that

rank may, by permission (obtained at the time of their retirement, but not subsequently), rise one step in rank, if before retirement they had served the time to qualify them for promotion.

The following are the full pay and allowances granted under this Order in Council :—

Captains.—The first 50, £1 13s. a day; the second 50, £1 7s. 6d.; the third 50, £1 2s. 6d.

When any of the first 50 are in command of the *Britannia*, Reserve Ships, or the Royal Yacht, their pay and command-money will be £2 5s. a day.

The table-money of £4 10s. a day allowed to Commanders-in-Chief on foreign stations to be extended to the Commander-in-Chief at Portsmouth.

The following is the scale of command-money to Captains, in addition to pay, excepting Captains paid at special rates. In sea-going rated ships and frigates, and such ships as the Admiralty may declare at the time of their being launched to be of the first class for this purpose, 18s. a day, provided a separate table is kept. In sea-going ships other than the above, 10s. 6d. a day. In harbour ships, being rated ships or frigates, 12s. a day; in others 7s. a day.

Captains of ships not keeping a separate table, and Captains borne for full pay and employed on special service, but not in command of ships, to receive the pay of their class, and an allowance of 5s. a day.

The following is the scale of half-pay to be allowed to the under-mentioned officers. Admiral of the Fleet, £3 7s. a day; Admiral, £2 2s.; Vice-Admiral, £1 12s. 6d.; Rear-Admiral, £1 5s. Captains: to each of the first 50, provided they have served two years in command of a ship-of-war at sea, 14s. 6d. a day; to each of the second 50, 12s. 6d.; to each of the third 50, 10s. 6d. Commanders: to each of the first 100 in seniority, if they have served one year on full pay as Commander, 10s. a day; to the remainder, and those who have not served as above, 8s. 6d. Lieutenants: under 3 years' service, 4s. a day; under 6 years, 5s.; under 9 years, 6s.; under 12 years, 7s.; above 12 years, 8s. 6d. Lieutenants may be allowed 5s. a day, half-pay, if through illness contracted in the service they shall have been unable to serve 3 years as above. Lieutenants with less than 3 years' service in the rank of Lieutenants will be allowed to reckon, besides, 1 year's service as Sub or Sub-Lieutenant; with less than 6 years, 2 years; and with more than 6 years their whole Sub-Lieutenant service.

The Scale of Retired Pay, according to age and service, to be as

follows. An addition to be made, as specified, for each full year of additional sea-service, or its equivalent; but the same not to exceed 5 years; and a deduction to be made for each full year wanting to complete the periods specified, but the same not to exceed ten years:—

Age.	Retired Pay.	Sea Service.	Added or Deducted.
Admirals	£850	30 years	£20
Vice-Admirals	725	29 „	15
Rear-Admirals	60	27 „	10

Captains, Commanders, and Lieutenants, at 60 years of age, with 27 years' sea-service, £600; 59, with 26 years' service, £585; 58, with 26 years' service, £570; 57, with 25 years' service, £555; 56, with 25 years' service, £540; 55, with 24 years' service, £525; 54, with 24 years' service, £510; 53, with 23 years' service, £495; 52, with 23 years' service, £480; 51, with 22 years' service, £465; 50, with 22 years' service, £450; 49, with 21 years' service, £425; 48, with 21 years' service, £400; 47, with 20 years' service, £375; 46, with 20 years' service, £350; 45, with 19 years' service, £325; 44, with 19 years' service, £300; 43, with 18 years' service, £275; 42, with 18 years' service, £250; 41, with 17 years' service, £225; 40, with 17 years' service, £200. £10 may be either added or deducted for every additional, or less, year's service performed as stated above.

No retired Flag-Officer to be allowed to receive, in respect of retired pay and good-service pension, an amount exceeding the half-pay of an Admiral of the Fleet.

A Captain retired from that rank to receive in retired pay, together with the good-service pension, a sum not exceeding £600; but, should the two together exceed that amount, he will be retired on £600 a year, relinquishing his good-service pension.

The pay of Commanders and Lieutenants retired from those ranks not to exceed £400 and £300 a year respectively.

After retirement no increase of pay to be allowed to any officer. The only addition possible will be in the way of pension.

No officer to rise more than one step in rank at or after retirement.

All service as Sub or acting Sub-Lieutenant to reckon for increase of retired pay.

Power to be reserved to the Admiralty to suspend at any time, and with respect to any rank, the provisions of the Order under which an officer may at his option retire, at an age less than that fixed for compulsory retirement in each rank.

The power vested in the Admiralty to grant lower rates of half-pay in cases of misconduct, to be extended to retired pay.

Retirement from the Active List not to disqualify any officer for employment at or under the Admiralty.

Officers to be allowed, at their own request, and with the consent of the Admiralty, to compound their retired pay under the Rules set down by the Treasury for administering Act 32 & 33 Vict., Cap. 32.

With respect to Pensions, the following regulations are laid down by the O. C. of 1870.

No officer to be allowed to hold two pensions at the same time, unless one of such pensions be a pension for wounds received in the service. No naval Aide-de-Camp, deriving emolument from his office, to be allowed to hold any pension, except a pension for wounds. Good-service pensions to be awarded for good and meritorious service at sea, preference being given, in cases of special gallantry, to officers who have commanded a ship in action against the enemy. Ten pensions of £300 a year each to be given to Flag-Officers of all ranks on the Active List; the intention being that two may be held by Vice-Admirals and two by Rear-Admirals qualified for promotion. Twenty-five pensions of £150 a year to be given to Captains. All officers in receipt of these pensions to be allowed to retain them after being retired. In consideration of the increase in the number of good-service pensions, the salaries attached to the offices of Vice-Admiral and Rear-Admiral of the United Kingdom have been discontinued. Should any officer holding a good-service pension be in receipt or be appointed to full pay or civil salary, or become entitled to a civil salary, or become entitled to a civil pension, exceeding the value of his good-service pension, the latter pension to be suspended so long as he receives such pay or salary, or civil pension, and the vacancy thus occasioned may be filled up. When such employment shall have ceased, the officer will resume a good-service pension, although the list be full; in which case the next vacancy will not be filled up. A Captain not to be allowed to retain his good-service pension when promoted on the Active List; a Flag-Officer to give up his good-service pension if he shall become Governor of Greenwich Hospital, or Naval Aide-de-Camp to the Queen. No Admiral of the Fleet to be allowed to hold a pension, unless a pension for wounds. Greenwich Hospital pensions for Flag-Officers to be awarded to old, infirm, wounded or disabled officers on the Retired List, of long service, but not to be conferred as a qualification for retirement. No

officers, except Flag-Officers in receipt of a Naval or Greenwich Hospital pension, to be allowed to retain it after being promoted. No pension, except a pension for wounds, can be compounded.

On the 5th of February 1862 an Order in Council is issued further regulating the promotion of 10 Commanders, 10 Lieutenants, and the retirement of Sub-Lieutenants.

By this Order it was found expedient to provide for the immediate advancement of a limited number of Commanders and Lieutenants, and also to diminish the restrictions on the promotion of Commanders, Lieutenants and Sub-Lieutenants, until such time as the Active List of Captains, Commanders, and Lieutenants should be reduced to the numbers established by the O. C. of 1870.

To effect this the Admiralty promoted 10 Commanders to the rank of Captain, and 10 Lieutenants to the rank of Commander.

This Order further provided that until the List of Captains is reduced to 150, officers should be promoted to vacancies caused by retirement, according to the following scale:—one Commander in every vacancy which then existed, or which should after arise on the List of Captains, due to the retirement of Admirals; one Commander in every two vacancies arising on the List of Captains by the retirement of Vice-Admirals, Rear-Admirals, or Captains; and one Lieutenant in each vacancy arising on the List of Commanders from the above promotions.

It was further authorised that, until the List of Commanders was reduced to 200, the promotion of only one Lieutenant should be made in every two vacancies arising from the retirement of Commanders. All vacancies arising from deaths, resignations, &c. to be filled up as they occurred.

Until the List of Sub-Lieutenants was reduced to 250 authority was taken to confer promotion on any Sub-Lieutenant who was considered deserving of advancement, although such promotion should cause the List of Lieutenants to be temporarily in excess of its regulated number.

Captains promoted to that rank before the 1st of April 1870, and who elected the new regulations for retirement, to be allowed, if physically unfit, or if they had not served for seven years, on retirement, an amount of retired pay not less than that which they would have been entitled to receive under the regulations of 1870.

The retirement of Sub-Lieutenants to be compulsory at the age of 40, or at any age if physically unfit for service. Until the List of Sub-Lieutenants had been reduced to 250, any such officer was to

be allowed to retire irrespective of age, retired pay to be granted as follows:—After 3 years' seniority, 3s. 6d. per day, an additional 6d. being given for each complete year beyond three served as Sub-Lieutenant until the maximum of 6s. was reached.

Service for retired pay was ordered to be calculated in accordance with the provisions of the Order in Council of 1870 relating to Flag-Officers, Captains, Commanders and Lieutenants; time during which a Sub-Lieutenant may have been on half-pay, after he had served three years in that rank, to be reckoned in the proportion fixed by the Order in Council. Sub-Lieutenants were farther allowed, at their own request, and with the consent of the Admiralty, to commute their retired pay under the rules laid down by the Treasury. The existing rules as to half-pay to Sub-Lieutenants while on the Active List was to remain in force.

On the 4th of August 1878 an Order in Council was issued further regulating the provisions made for the sea service required for promotion to Retired Rear-Admiral, and as to sea service in Harbour and First Reserve Ships.

Captains retired under O. C. 22nd February 1870 to be enabled to rise by seniority to the rank of Retired Rear-Admiral, if they have served three years as Captains in command of a ship of war at sea, under the following improved regulations:—

Service of an officer when borne on the books of any Harbour Ship, or of any First Reserve (Coastguard) Ship subject to the following exceptions: 3 years served in any Harbour Ship or First Reserve (Coastguard) Ship, or in any tender to such ship, as Lieutenant or Commander, or in those ranks combined, to count as sea-service, but not as sea service in a ship-of-war at sea; 3 years served either before or after 1st August 1873, or partly before and partly after that date, as Captain in command of any Harbour Ship or First-Reserve (Coastguard) Ship, or any tender to such ship, to count as sea service, but not as sea service in a ship-of-war at sea. These regulations, however, were not to apply to any officer who had retired before 1st August 1873. Services subsequent to that date in tenders to Harbour Ships and to First Reserve (Coastguard) Ships at home, and in Harbour Ships abroad, and their tenders, would in such cases, as directed by the Admiralty, count as service in a ship-of-war at sea.

On the 5th of August 1875 a new Order in Council was issued, modifying the O. C.'s of 22nd February 1870 and 4th August 1873 in reference to Retirement and Annual Promotions on the Retired List.

The Admiralty, finding that it was necessary to provide tempo-

rarily for a more uniform flow of advancement to officers, and to relax slightly the rules as regarded the age at which Flag-Officers and Captains may be optionally retired, and to modify still further the restrictions respecting the advancement to Flag Rank of officers on the Retired List and promotions on that List, established the following provisions :—

1st.—To promote annually 7 Captains to Flag Rank, effecting this by promoting to Flag Rank, as heretofore, in vacancies caused by death and retirement, and by supplementing any vacancies short of service at the end of each year, so long as a maximum number of 68 Flag-Officers be not exceeded, adjusting the Flag Ranks thus: 3 Admirals of the Fleet, 10 Admirals, 20 Vice-Admirals, 35 Rear-Admirals; promotions to the List of Admirals to be in the proportion of 1 to 2 vacancies caused by retirement until the number be reduced to 10, and the addition to the List of Vice-Admirals and Rear-Admirals to be in the proportion of 1 Vice-Admiral to every 2 Rear-Admirals added to the List; should there be more than seven vacancies in any year, the excess not to be filled up in that year, provided the List of Flag-Officers be kept up to 50.

2ndly.—That for the present there should be promoted annually 12 (and, should vacancies occur, as many as 15) Commanders to the rank of Captain, effecting this by filling every vacancy and supplementing any vacancies short of 12 at the end of each year, so long as a maximum number of 175 Captains be not exceeded; should there be more than 15 vacancies in one year, the excess not to be filled up that year.

3rdly.—That for the present there should be promoted annually 20 (and, should vacancies occur, as many as 25) Lieutenants to the rank of Commander, effecting this by filling every vacancy, and supplementing any vacancies short of 20 at the end of each year, so long as a maximum number of 225 Commanders be not exceeded; should there be more than 25 vacancies in any year, the excess not to be filled up in that year, provided that the List is kept up to 200.

4thly.—That for the present the Optional Retirement shall be sanctioned of Flag-Officers and Captains of the following ages, viz.: Admirals and Vice-Admirals, 55; Rear-Admirals, 50; Captains, 45; such optional retirement to be subject in each case to the approval of the Admiralty, and to be restricted to 3 Flag-Officers and 6 Captains annually, power being reserved to the Admiralty to extend this option to a larger number hereafter should such a course appear desirable.

5thly.—That one step in rank, according to seniority, be granted to all Rear-Admirals and Captains who may have been, or who may be hereafter, placed on the Retired List, irrespective of any qualifying service, such advancement not to carry with it any increase of retired pay.

On the 21st of July 1876 an Order in Council was issued touching the Commanders who had been placed on the Retired List of their rank under O. C.'s of the 22nd February 1870 and 4th August 1878, and who, not having the required sea service, were not entitled to a step of rank on retirement. By this new order this regulation was modified, and it was ruled that commanders who had already been retired, or who may hereafter retire, without having served sufficiently long at sea to qualify them for promotion to the rank of Captain, may, at the discretion of the Board, be allowed to assume the rank of Retired Captain on attaining fifteen years' seniority, but without any increase of retired pay or widow's pension.

By an Order in Council dated 4th December 1878, the order of the 22nd February was modified, so far as regarded the compulsory retirement of Admirals and Vice-Admirals, by the following provisions, viz.: Flag-Officers who have not hoisted their flags, as Flag-Officers, to be retired at the age of 60.

On the 29th November 1879 an increase was made in the number of Lieutenants by the following provisions in an Order in Council:—

1stly.—That the number of Lieutenants for executive duty shall be 800.

2ndly.—That the number of Lieutenants be gradually increased to 1,000 in proportion as the numbers on the List of Staff Commanders and Navigating Lieutenants fall below the number fixed by O. C. of 1870, viz. 250, so that eventually the List of Lieutenants shall be 800 for executive duties and 200 for navigating duties.

3rdly.—That 75 Sub-Lieutenants be promoted during the year 1879, without reference to the number on the Lieutenants' List; and in each successive year a number that shall not exceed the number that has been added to the List of Sub-Lieutenants on the previous year.

4thly.—That the retirement of Lieutenants on the terms sanctioned in par. 24, Chap. X. of the Order in Council of 22nd February 1870, be continued.

On the 24th of March 1880 the O. C. of 22nd February 1870 was modified by the following provisions:—

1stly.—Captains who have been or may be retired from that rank

(unless retired from non-service) to be allowed to rise to the rank of Vice-Admiral on the Retired List if before retirement they had, or shall have, served the time necessary to qualify a Captain for promotion to the rank of Rear-Admiral on the Active List.

2ndly.—Such advancement to be conferred according to seniority, any officer hereby qualified for Vice-Admiral's rank, and who has been debarred from rising above the rank of Rear-Admiral, to date his promotion to Vice-Admiral from the day on which he would have been promoted had such restrictions not been in operation. Promotion not to confer claim to increase of retired pay.

An Order in Council dated 5th June 1881 empowers the Admiralty to advance annually 25 Lieutenants to the rank of Commander, so long as a maximum number of 225 Commanders is not exceeded.

With a view to encourage officers to acquire a thorough knowledge of professional and other useful subjects, a clause was introduced into the Queen's Regulations (dated 1 Feb. 1884), to the effect that a Lieutenant's commission, dated from the day of his attaining six months' seniority as Sub-Lieutenant, would be given to any Sub-Lieutenant who obtained first-class certificates in all subjects, and not less than 1,800 marks in the College Examination. He should also be recommended by the President of the Royal Naval College, and should possess certificates of good conduct and zeal in the performance of his duties for the whole period of his service.

On the 22nd May 1884, the following arrangements affecting Naval and Greenwich Hospital Pensions, in lieu of those hitherto appropriated under the Queen's Regulations, 1879, and the Order in Council of 1st April 1881, were made:—5 Naval Pensions and 1 Greenwich Hospital Pension, amount of each £80, to be allowed to Captains; 18 Naval Pensions and 5 Greenwich Hospital Pensions, of £65 each, to Commanders; and 42 Naval Pensions and 8 Greenwich Hospital Pensions, of £50 each, to Lieutenants. Under the arrangements of this document, Naval and Greenwich Hospital Pensions stood thus:—

Officers.	No. of Naval Pensions.	No. of G. H. Pensions.	Amount of Each Pension.
Flag Officers . . .	Nil	10	£150
Captains . . .	5	1	£80
Commanders . . .	18	5	£65
Subalterns . . .	42	8	£50

By an Order of the 19th May 1885, officers holding the position of Second Lieutenant are permitted to continue in the receipt of

the allowance attached to the performance of their duties, when absent from their ships on special and important duty; and the officers temporarily performing the special duties of the absent officers may, at the discretion of the Admiralty, receive extra pay, at such rates as may be determined, but not in excess of the ordinary rates of extra pay authorised by the Naval Regulations, nor the amount of the allowance attaching to the special duty performed.

We are compelled, by reason of our limited space, to postpone our narrative of the progress made by other branches of the naval service.

Operations against the Line of Communications.

By Col. G. A. FURSE.

Two great masters of the art of war, Frederick the Great and Napoleon, had personal experience of independent operations conducted against their lines of communication. In 1745 Frederick the Great was compelled to evacuate Bohemia, the Austrian cavalry and partisans having interrupted all his communications and placed his army on the verge of famine. At the close of the last century the action of the Tyrolese free companies against the communications of the French army became so formidable that Napoleon had to resort to very harsh measures to put them down. Later on, in 1812, when advancing on Moscow, he was seriously annoyed by the Cossacks on his line of communications; to such an extent was this, that Murat, under date of the 25th of September, states that his men could not go out to forage without great risk of being captured, and that he lost every day 200 men in this manner.

These great captains were compelled to take measures to protect their line of communications: the first organised free battalions of jäger and hussars under picked officers to hold the enemy's partisans in check; the latter had recourse to flying columns under chosen officers to form ambuscades for the Russians. In his turn Napoleon, when the allied armies invaded France in 1814, directed the organisation of a *levée en masse* for action against the invaders' communications.

In the Secession War in America many notable raids on the enemy's communications were effected on both sides. The most remarkable of these was Stuart's celebrated exploit in rear of Mac-Clellan's army, in June 1862, one of the most daring deeds of the American War. This operation was, strictly speaking, a reconnaissance; still, from the destruction of the enemy's means, it assumed the character of a raid on the communications. Stuart,

who had full liberty of action, having penetrated in rear of the Federal army, had to choose whether he should return by the road he had come, or should complete the circuit, and rejoin Lee by crossing the Chickahominy. As it was naturally to be expected that the enemy in great force would occupy the former, so as to contest the passage, he selected the latter course, which, though the boldest, was in reality the less dangerous. On his onward march, Stuart destroyed on the Pamunkey several ships loaded with provisions, surprised the telegraph station at Tunstall, and damaged the railroad. He captured a convoy of provisions, which he burnt, and destroyed the railway bridge at Black-Creek, thus severing the Federal communications with the Pamunkey.

Stuart's position was dangerous on account of the smallness of his force, and of the operations being conducted in such close vicinity to the Federal army; still, Pleasanton, who was despatched in pursuit with a large cavalry force, though he marched fifty-five miles a day, did not overtake him, for, fortunately, the ruins of a bridge on the Chickahominy, which the Confederates had destroyed some weeks before, were available for repairs, and enabled Stuart to lead his men over the river in safety.

In three days the Confederate general marched 150 miles, gathered relevant information regarding the strength and position of the Federal army, brought back 165 prisoners, a large quantity of arms, 260 horses and mules with their equipment, and destroyed provisions and warlike stores valued at several millions of dollars. All this he effected with a very trifling loss.

On the 22nd August 1862 another raid was effected in rear of Pope's army at Catlett's station, on the Orange and Alexandria railroad. This raid proved very disastrous to the Federal army, for, all the private and official papers of the Federal commander having fallen into Stuart's hands, from the information thus gained were directed the operations which culminated in Pope's defeat at Manassas.

General Morgan furnishes the following results of a raid he effected in July 1864:—"I left Knoxville on the 4th July with about 900 men, and returned to Livingston on the 28th with nearly 1,200, having been absent just twenty-four days, during which time I had travelled over 1,000 miles, captured seventeen towns, destroyed all the Government supplies and arms in them, dispersed 1,500 home guards, and parolled nearly 1,200 regular troops. I lost in killed and wounded about 90 men."

In the late Franco-German War the German army, had to depend upon a few lines of railway for bringing up supplies and

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reinforcements ; these railways became their main lines of communication, and in December 1870 and January 1871 their working was often interrupted by the French. At the very commencement of the campaign it will be recollected how a small body of German lancers, by blowing up a viaduct on the railway which connected the various French Army Corps, interrupted their lateral communication and prevented reinforcements being sent by rail to the battle-field of Wörth.

Owing to the considerable numerical strength of the armies now placed in the field, and the rapidity with which military operations are carried out, the lines of communication have assumed a more than ever prominent place in war. Their importance has augmented with the increased attention that is now bestowed on their organisation and defence, and their relation to an army in the field is of such vital interest to it that it is not unreasonable to predict that operations directed against these, as tending to cause serious embarrassment to the enemy, will form a special feature in future wars.

For its maintenance in the field an army is now greatly dependent on railways and telegraphs, which, as they cannot be adequately guarded in their entire extent, lend themselves singularly to attack by small bodies of very mobile troops, who can move about with little fear of being detected, and who can make off as soon as their special object has been attained. Even the partial obstruction such bodies may effect by the demolition of a bridge or viaduct, the blowing-up of a small tunnel, and the like, if executed at the right moment, may cause considerable damage to the enemy, whilst a constant repetition of the same will undoubtedly become a source of never ending anxiety.

The more the enemy is alarmed by constant attacks on his communications, the greater will be the number of troops he will have to detach for their protection ; his anxiety to guard his line of supplies will, therefore, be conducive to a corresponding reduction of his forces at the front, in itself no inappreciable advantage. This was illustrated by the exploits of the organized bands employed by the Russians and Prussians in rear of Napoleon's army in 1813. Their enterprise was such that his convoys needed very large escorts, and the posts on the line of communications required strong garrisons, all of which greatly reduced the fighting strength of the French army.

It is unquestionable that immense advantages can be obtained by detailing bodies of light troops for the sole duty of operating against the enemy's line of communications. Troops under able and enterprising leaders, reserved for this special object, would

endow a commander with a most powerful instrument to employ against his opponent.

No army can keep in a concentrated state ready for battle unless properly supplied with food; if a continuous stream of supplies is difficult to maintain, it must break up and scatter to subsist. Great injury, therefore, can be done to an army in the field indirectly by attacking its source and channel of supply; this will lay it open to be defeated in detail. The losses incurred in the operations against the communications will be fully counterbalanced by the important results which such action will secure.

The best body to employ for this purpose when great mobility is so essential is undoubtedly a body of the lightest possible cavalry or mounted infantry. Attacks on the line of communications, which partake of the nature of surprises, must mainly depend on rifle-fire and a bayonet charge. Cavalry alone cannot compete successfully against a few companies of infantry armed with breech-loaders, and dismounted cavalry armed with carbines is not sufficient; we must employ for this purpose infantry, mounted, armed with an effective weapon, and good practised shots. Whatever may be adduced to the contrary, the cavalry soldier, trained as such, by simply dismounting and taking to his carbine does not become a good infantry soldier.

Many of our officers are perfectly capable of organising a good body of irregular troops for this purpose, so that, as long as we can endow these with good officers and good non-commissioned officers, we can abstain from employing our never sufficient regular troops on this special service. The particular duties of these bands are to surprise and harass the enemy's rear, to destroy his means of transport and communication, and to throw all manner of supply difficulties in his path. To provide, however, against cruel reprisals on the population, all this must be effected by armed bands, clothed in uniform, and like any others constituting a recognised portion of the troops in the field. Some light field pieces might be considered a necessary adjunct to the mounted men, but even these might be set aside, being replaced by rockets to set fire to stores and magazines, to cause serious disorder in a convoy, &c.

The assistance of the inhabitants, when it can be obtained, is most important: however, we should not forget that we expose them to cruel retaliation from the enemy for the assistance they give us. By watching the enemy they can afford us timely information as to his movements, they can deceive him as to ours, and lead him astray; they can apprize us of any carelessness or over-

confidence on his part, of the inadequacy of any of his detachments, and can furnish reliable guides intimately acquainted with the difficult tracks and unfrequented paths of their districts. In an offensive war the matter presents greater difficulty, and an invader, as a ruling principle, must distrust the population; still, good discipline and ready-money payments have always proved effective means for abating the hostility of the inhabitants. In most countries there are people of strong feelings who hate the enemy, more or less on personal grounds; in others this feeling is engendered by religious difference, or political ideas, and these individuals, who are badly disposed towards the enemy, should be turned to the utmost possible account. The leaders should endear themselves to the people as much as possible, by good treatment, and by the rigorous discipline of the troops. Only in one thing they should be terrible, and that is in punishing treachery. A few influential men retained as hostages will check all desire to betray us.

Having to work round and gain the enemy's rear, great distances will have to be traversed rapidly, and, the damage once effected, the attacking force must guard itself against being overwhelmed by superior numbers of the enemy. The commander of the army need not burthen himself further with the action of these bands; having given them enterprising leaders, the means they originally require, and actual independence of action, he must trust to their effecting the utmost possible damage on the enemy, by doing which they will render him very signal assistance.

The general aim of such bodies is to deceive, annoy, and damage the enemy wherever he may be. They should themselves be ubiquitous; their safety depends on their constantly shifting their whereabouts, and never, if possible, returning by the road they have come, where the enemy may be on his guard. Their constant appearance should cause very considerable anxiety to the enemy; they should seize officers badly escorted, should pounce on badly-guarded convoys, weak posts, small detachments or patrols, and should punish summarily all carelessness on the part of the foe. They should create panics and alarms in large camps and towns by their sudden appearance in the neighbourhood; they should render the roads unsafe, prevent the enemy effecting requisitions, destroy small bridges, stop and delay the march of his convoys, seize his correspondence, and destroy the powerful aids he receives from railways and telegraphs.

The action of the hawk, who suddenly pounces on its unsuspecting prey, seizes it with its unrelenting claws and disappears, is the prototype for such a body; it should deal successful blows, quick

and, if necessary, even terrible, leaving not the slightest trace to show its line of retreat.

Means of transport are required on such a large scale by an army in the field, that everything which, strictly speaking, constitutes transport, be it railways, wagons, carts, animals, steamers, barges, or, in short, all that an enemy may turn to advantage in moving his stores and supplies, should be denied him. His postal and other special means of intercommunication must be stopped; this not only on the main lines, but on all other lines of which he may try to avail himself in default of these. It may be possible even to remove or destroy the means of subsistence which he may find in the country, and to drive to a considerable distance from his line of communications the people who can render him any manner of assistance.

In Section X. of the official account of the Franco-German War of 1870-71 occurs the following passage:—"In the days immediately succeeding the 19th September, the whole of the requirements of food had to be drawn from the commissariat columns, as the inhabitants in their flight had driven off nearly all their cattle, and had for the most part destroyed such stores as could not be removed. In the fields the smoke was still rising at many places from the corn-ricks which the French had fired; the well-filled wine-vaults alone appeared to conceal inexhaustible supplies."

What refers to the damage which can be inflicted on the enemy's line of communications applies in a contrary sense to one's own, and we should take such measures as will prevent the obstruction we can cause the enemy being practised on ourselves.

To carry all this out to the best effect the leaders must possess a thorough knowledge of all the difficulties connected with the line of communications, and must be able to appreciate correctly the most vulnerable points, by acting against which the greatest and most lasting damage can be inflicted on the enemy.

Information as to the enemy's movements, actions, numbers, position, &c. is essential in war; in fact, acquiring information is a matter of the very first consideration: all depends on this, and no means should ever be spared to acquire it. A commander who is well-informed on all that relates to his opponent, knows his enemy's hand, and can play his game with preponderating advantage. This applies more than ever when enterprises are directed against the line of communications, for it is essential to know the weakest points of the enemy, be it his numbers, the carelessness or want of enterprise on the part of his officers, the disproportion between the impedimenta and their escorts, the re-

lative difficulties of the ground, the want of sufficient stores at any special point, or the most propitious time to strike. The leader of a special band selected to injure the enemy's communications should have a picked body of intelligent scouts, and should make use of spies to a considerable extent. Exact and timely information for him is everything. General Sheridan, in his report on the operations of the 1st and 3rd Cavalry Divisions of the Shenandoah, brings to special notice the services of Major Young, Head of the Intelligence and Scouting Service, and of his thirty or forty troopers, who, at the imminent risk of their lives, never hesitated to go wherever they were sent to obtain that ever-essential element of success, information. Ten of these scouts were lost during the course of the operations.

General Sherman, in his account of the Atlanta campaign, remarks that his posts on the line of communications, though attacked, were not carried. There is no particular object in carrying these posts, as the serious losses incurred in carrying them are not balanced by sufficiently corresponding advantages, and the posts will have to be evacuated on the approach of a large force which is sure to be sent to recover them; we must, in preference, make the stretch of road between two consecutive posts unsafe; we must stop the traffic over it, and throw obstacles in the forward movement of supplies and reinforcements to the front. It is well known what a very difficult thing it is to conduct a lengthy convoy safely to its destination when there is an enemy handy to attack it at any moment, and what delays can be caused by making the commander of the escort assume a formation of defence. Our parties should infest the line at many different points, and, if practicable, as near the advanced dépôt as possible, as an army can subsist on the resources of the locality it occupies only for a very brief time, and is greatly dependent on the reserves pushed forward from the advanced dépôt, its nearest reliable source of supply.

The composition of the enemy's army will have much to do with his line of communications. If he is numerous in cavalry, his cavalry may protect the line; if he has the means to push supports rapidly forward from the rear, or if he has made proper dispositions of reserves to reinforce the communication troops, action against his communications may be very difficult. All this should be ascertained and taken into account. The leaders must have good maps on which should be noted the enemy's stations, magazines, and dépôts, the position of defiles, bridges, fords, and difficult parts of the roads, the telegraph stations, and railway bridges. The amount of stores and supplies in the enemy's

magazines and depôts should be, if possible, ascertained by spies who will hire themselves out as labourers, and when the stock gets low, it is reasonable to expect that convoys will soon be coming up to replenish them.

The leaders of bands detailed for this service should be chosen on account of their well-established qualifications, the principal being sound judgment, great activity of mind and body, great self-reliance, love of adventure and enterprise. Men of independent mind, of strong will and determination, will always do well; however, their qualities should rest on something better than mere report, which often on service proves fallacious. Their instructions should be few but explicit: "to do the utmost damage to the enemy, and to prevent as much as possible a continuity of work between his base and the advanced depôt." They should harass the enemy as much as possible, without compromising their own troops; abstaining from attacking numerous forces, and attempting to carry places that are well guarded and strengthened. They must secure the confidence of their troops by constant successes; they must surprise without being surprised; they must fall on the enemy with the rapidity of lightning—if surprise is impossible, they should be off, and on no account whatever should they let the enemy score a success. If a stroke fails, in place of a renewed attack, the issue of which may be doubtful, they should make a dash at a different point. Their special instructions given them they should be allowed *carte blanche* for everything else, for great independence of action is necessary for this service. Bold leaders must be seconded by men who thoroughly resemble them; these should all be well mounted, if any of their horses fall sick they should requisition fresh ones; having to be free from impedimenta, their troops must live on the resources of the country, and must be housed and sheltered the best way they can. No one but the leaders themselves should know the intended points of attack, and the result of important achievements must be rapidly communicated to the Chief of the Staff, for these may have important bearings on the conceptions and dispositions of the General commanding. Operating in rear of the enemy, this will present considerable difficulty; however, every opportunity must be seized to do so.

Troops for employment against the enemy's communications should be divided into small units, each one composed of a handy number of companies, each company, in its turn, consisting of a number of soldiers and a small contingent of scouts; these latter should be the pick of the former, and they should form a

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small squad *d'élite*, to which it should be the aim of all soldiers to belong. Recompense for important work performed, either in promotion, money rewards, &c., should be lavishly awarded.

According to the work to be performed, they would have to be provided with dynamite to blow up and destroy bridges and railways; Hale's rockets to fire into convoys and cause a stampede amongst the animals; tools to cut trees and branches with which to form abattis across roads, throw small bridges across streams, &c. &c. In the Napoleonic wars the French armies in Germany and in Spain had recognised the necessity of detailing a small squad of mounted pioneers to each cavalry regiment, the cavalry having often to act by itself, and the engineers not being sufficiently mobile to aid them; when it was a question of making a sudden dash at some important point, a service so essentially the rôle of mounted troops, the presence of a few mounted pioneers was deemed essential. If mounted pioneers are necessary for cavalry, how much more so they will be for troops intended to act against the line of communications. Each band should have its squad of men, either especially trained or picked from men whose former avocations can replace this training.

These soldiers should be dressed plainly, so as not to attract notice, no buckles or shining metal of any description being used in their equipment. The scabbards of their swords (if cavalry) should be of wood, covered with leather; ropes should replace steel picketing chains; loose kettles, or anything which may make a jingling noise, should be avoided. The animals should be all geldings, of dark colour, so as to avoid the presence of the troops being revealed either by the neighing of horses or by their conspicuous colour.

The boast of these troops should be never to be off their guard, to be always on the alert; they should never take off their accoutrements, and their arms should be always at their side. They should be very reticent on their doings, so as to keep the enemy in complete darkness as to their numbers, manner of proceeding, habits, &c., and a certain degree of mystery should surround them, trusting to no one, for even their friends may unwittingly put their enemies on their traces.

These bands should be constantly changing their locality, and, as a general rule, they should not sojourn more than a day in the same place, bivouacking in woods and hollows rather than in towns and villages. By being here to-day and there to-morrow the enemy will be sorely disconcerted. They should appear when least expected; at times a show may be made of having evacuated

a locality, this, in reality, being only a feint to seek concealment close by, the more readily to pounce on an unsuspecting foe. At other times it may be necessary to spread false rumours, to pretend to be the advanced guard of a large force, disappearing suddenly, obliterating all traces, and reappearing in quite a different locality. To do all this the troops must be unhampered by baggage, and must be content to be satisfied with very little. Irregulars, habituated to hard fare and constant movement, will adapt themselves to this style of life better than British troops who have been carefully nourished and looked after. As the service will be severe, both men and horses will have to be rested from time to time, as opportunities occur. Any stores, ammunition, and the like, which it may be absolutely indispensable to hold in reserve, should be kept in some locality easy to get at.

To conceal as much as possible one's movements through a country very reliable guides are required, and these must be retained, under any circumstances, until the information they may give can do no harm.* The night is more suitable for this description of service than the day. Rest by day and march by night should be the rule, and, in moving from place to place, the most unfrequented passages, mountain tracks, and forest roads should be selected.

It is advisable to avoid crossing rivers by the regular bridges, selecting the small ones and fords in preference; also to avoid passing through any locality where the small size of the force can be noted and the troops counted. The direction of the march should be kept a profound secret to all, and should not commence until the people of the country have retired to rest. It often may be desirable, and, indeed, necessary, the better to conceal the real object in view, to start in the opposite direction to the one ultimately intended to be followed, and to regain the latter by a detour. To avoid noise at starting, the troops should be trained to be always ready to move at a moment's warning, and to saddle, mount, and form up in the most rigorous silence.

When it becomes absolutely necessary to bivouac in a village or town, having selected the place in which it is intended to halt for

* The savage, by necessity, has the best memory for ground, can easily read certain signs and marks, and, with unerring facility, can detect the approach of danger. The peasants, foresters, and woodcutters come next, and, last of all, comes the more highly civilised being who follows other pursuits. It is habit, familiarity, and necessity which train the least educated man in this; in place of life-long habits our officers in the pursuit of sport soon acquire some of the aptitude of the savage in this matter, showing that instinct has nothing to do with it, but that it is a mere matter of habit and observation.

the day, a picked section of sharp good men should head the main body, and, as it approaches the point to be occupied, should establish a complete cordon round it several hundred yards off, to prevent anyone leaving to give information or to raise the alarm. The column should get into the village before daybreak, if possible, and occupy all the exits, small pickets being posted under cover further forward. The inhabitants should be ordered to continue their usual avocations, and people should be allowed to enter the village, but, under no pretence whatsoever to quit it. When the time comes to leave the place the troops should go without giving any notice, making a circuit so as to put people on a wrong scent, afterwards gaining the road it is intended to pursue. It is very necessary to be certain that no one follows the troops, or has become acquainted with the direction they have taken.

If the column is to remain concealed in a hollow, sentries must be placed all round to prevent soldiers showing themselves on the heights; fires must not be lighted, the troops having to satisfy themselves with ready-cooked provisions. Should there be any sick with the column, their food can be warmed up by means of spirits of wine; troops of this description must, however, debarrass themselves of these sick and wounded the best way they can. Regular outposts would take up too many men, and are not as effective as flying patrols of one non-commissioned officer and three rank and file. Scouts and small patrols can penetrate almost anywhere unseen, and can acquire better information than more numerous parties.

Activity and secrecy are indispensable conditions for success in operations of this nature. The leaders should not confide their plans to any person whomsoever; indeed, they should study to mislead everyone as to their real aims, intentions, and movements. They should never forget that unexpected incidents often exercise a very decided influence upon these operations, and they should provide accordingly. The enemy, in his turn, may surprise them by feigning negligence, and thus lead them into an ambuscade; for him surprise is effected by concealment of his dispositions, by covered positions in which he has hidden his troops, and by obstacles prepared with the view of obstructing an attack or frustrating a surprise.

Now let us turn our attention to the way the surprise of an enemy's post should be conducted. Military works contain very little detailed instructions regarding these minor operations, and our troops are not practised in stratagems or in the art of scouting or concealing their march; in fact, though they have generally to

deal with a wily foe, their education in these points is entirely neglected, hence the deplorable events we often have to regret.

A surprise is a well-conceived attack delivered against an enemy taken unawares. It effects a high degree of confusion, disjoined action in the enemy's ranks, and loss of individual courage through dismay. The less time allowed to recover from these the better the results. The moral effect of a surprise, always great, is augmented when it comes from a direction from which it was not expected.

That the attack may be made with every prospect of success it is indispensable to secure the most reliable information possible regarding the actual strength and position of the enemy. This information can be obtained by means of scouts, spies, prisoners, deserters, and by the intelligent sounding of the inhabitants. There is a great art in gleaning true and relevant information from the highly-coloured or false statements of the population; the reports of the scouts will, after all, be the most worthy of credence, as these men know what manner of information is principally needed, and therefore they seek for it.

Scouts or small reconnoitring parties should proceed with as much precaution as the main body, if not even with more, for the main body only moves under cover of the scouts; the latter should never move by much frequented roads, the byways are the ones they should select. They should approach neither towns nor villages by the ordinary roads, but should stop in isolated houses from which trustworthy people should be sent into the villages or towns to acquire information about the enemy. If it becomes necessary to pass through towns or villages, this should be done by night.

Though a surprise may succeed at any time, it is too risky a thing when only mounted troops are employed to resort to night surprises, for darkness gives rise easily to mistakes and confusion. In all cases it is preferable to arrive in the evening in the neighbourhood of the place selected for attack, to conceal one's troops, to gather during the night still further information, to reconnoitre the ground very thoroughly, and to execute the stroke at daybreak, though certainly that is the time when European troops are on the look-out for an attack. If the attack has unavoidably to be delivered at night, the time when the reconnoitring patrols of the enemy have come in, and sleep is most general, is the best. In such cases each man should wear some distinguishing mark, such as a white handkerchief or band round the arm or round the head-dress. It should be borne in mind, with regard to night attacks, that troops invariably fire high, and that the effect of musketry at

night is very uncertain ; the savage creeps along the ground in the darkness of the night to approach the enemy's post and to become acquainted with his dispositions, and the scouts should imitate him.

The leader in whose hands rests the entire conduct of the enterprise should assign to his next senior officer the execution of the actual attack, for, should it not succeed, he must be there uninjured to draw his men off and direct the retreat ; if the surprise, on the other hand, turns out well, he must be there to profit from its success. His lieutenants must be well acquainted with his designs, there must be no possibility of a misunderstanding either as to the scope of the attack or as to the action which should immediately follow it. Himself he should occupy a position from which he can properly supervise and direct the operations, and communicate with his lieutenants by a few simple signals ; a reserve should invariably be at hand under his immediate orders.

In every case it will be prudent to post a patrol on the road on both sides of the point attacked, these patrols must watch the approaches, give timely warning of any body of troops coming up, and prevent messengers proceeding to the next station to give warning or to demand assistance. It stands to reason that the telegraph wire on both sides should be cut at the right moment. If practicable, a party should occupy the opposite side to the point attacked to cut off the enemy's retreat in that direction, above all if there is cover behind which he may rally.

The actual circumstances and the nature of the ground alone can show the best way of effecting a surprise. The leaders should be able to form a rapid estimate of the tactical nature of the position, and must have a right intuition of how best to accomplish their task. The more thorough the surprise, the more complete will be the defeat ; the enemy should only discover his foe when he is in his midst, hence he should not be startled by cheering before he is actually reached. The commandant of the post and his correspondence are always objects to secure. The telegraph and post-offices, the magazine, the treasure-chest, the railway-station, and municipal buildings should be occupied. All records must be seized, and all maps found in municipal offices, civil engineer or land-agents' offices, &c., must be appropriated ; many of these are of great value and accuracy.

The line of retreat in case of failure should be clearly indicated to all section leaders, and a place of assembly selected on this line not too close to the point of attack, under cover of some natural obstacle, where all parties will gather together in case of being

driven back by superior forces. The officers and non-commissioned officers should be well acquainted with all the roads, defiles, bridges, and tracks on the line of retreat, so as to effect their escape in case of ill success. They should be educated to cultivate a good eye for country, to acquire a good memory for localities, and readiness in recognising important land-marks and remarkable natural features.

To come quickly, and to disappear quickly after the object in view has been attained, are the first conditions of success. If the information acquired proves incorrect, and the enemy is found on the alert or in great force, the troops should break up in small parties and make off without delay, to concentrate elsewhere and try another coup. Even if a bold stroke succeeds, it is not wise to remain on the spot after all possible damage has been done; this should be promptly quitted, and a forced march should be made, after which the troops can be accorded the rest they will be in need of, with little fear of being disturbed.

To do all this it is very essential to instruct the troops thoroughly, and to make them rehearse operations of this kind. As these operations are of a very practical nature, and bring into play the aptitude and intelligence of the men employed, instruction in these particulars are not so wearisome as the constant performance of drill. To qualify both officers and non-commissioned officers for employment in these bands, they should receive a special training in peace; for the privates, the training can be taken in hand when the corps are raised; with competent men for officers and non-commissioned officers, the rank and file will soon pick up their work, and their intelligence and *morale* will soon develop themselves under men who are thoroughly up to their work. All alike should, however, know that the principal requirements are secrecy and concealment; they must learn to estimate correctly what they see, and know thoroughly how to report it. All should be able to ride across country with confidence, keeping their horses in hand and saving them as much as possible.

Each unit employed for this special purpose should be fractioned into small sections, each section being placed under a permanent leader, who should be inseparable from it, and who should become the instructor of the men, so that they may thoroughly understand what they will have to do under every possible contingency.

Great self-denial and indefatigable exertion on the part of the leaders is imperative; they must always remain on the watch whilst securing rest for their troops. The well-known French

writer, Ludovic Halévy, gives in the following words Mère Jourdain's account of what passed at Étretat.* Referring to the German officers during the Franco-German War of 1870-71, the woman narrates : " D'ailleurs, ils étaient toujours en mouvement; ils envoyaient des estafettes par-ci, des estafettes par-là. La nuit il y avait toujours deux ou trois officiers que ne dormaient pas, qui surveillaient les soldats, qui commandaient des patrouilles. . . . Le dimanche soir, le capitaine a reçu une grande lettre vers minuit. C'était une lettre du général. Je ne sais pas ce qu'il y avait dedans, mais je sais que les officiers ne se sont pas couchés de la nuit, qu'ils allaient et venaient avec beaucoup de mouvement."

Though we have to stimulate good work in the rank and file by rewards, the officers themselves should work simply for duty's sake, and not for the prospective honours at the end of the war. In the years of the Peninsular War, in the Crimea, before the Victoria Cross was instituted, in the dark days of the Indian Mutiny, before the mania for orders, medals, and brevets was known, British officers did better and braver things than they have ever done since. All the working for the purpose of getting rewards is not healthy; it is too sordid a motive, and the thing has been greatly overdone in our petty wars. Disinterested aims, simplicity of purpose, are more in consonance with the character of the true soldier; renown for valour, ability, and a conscientious and disinterested performance of his duty is what he should covet.

* *L'Invasion*, par Ludovic Halévy, p. 202.

Naval Reform.

TRANSLATED FROM THE LATE MONS. GABRIEL CHARNES' "LA RÉFORME
DE LA MARINE."

By J. E. GORDON-CUMMING.

CHAPTER I.—*cont.*

TORPEDO-BOATS AND GUN-BOATS—*cont.*

8.

THE discussion may be endlessly prolonged as to whether squadrons of ironclads would resist the attack of a fleet of torpedo-boats. We ourselves consider that it is decided by the result shown at the manœuvres of every European Power. It is no longer a question of pure theory, but of facts proved by experiments. Nations who, like Germany and Austria, renounce the construction of ironclads and order numerous torpedo-boats, therefore take a clear and prophetic view of the future, and this will ensure for them a naval force superior to those of their rivals.

It is long since Admiral Aube wrote: "A squadron, being more or less a collection of ironclads, is no longer the guarantee of naval power." And quite recently M. Gougeard, the former Naval Administrator in the Gambetta Cabinet, said in a pamphlet which gave rise to much discussion: "It is, and always will be, quite ridiculous to risk 12 to 15 millions, or even more, against 200,000 or 300,000 francs, and six hundred men against twelve."

Thus, on this point, doubts are gradually disappearing, and the defenders of ironclads are reduced, as a last resource, to speak of the enormous sums spent on the actual *matériel*, from which it would be, in their opinion, disastrous to draw no profit.

But it is not enough to recognise the necessity of building more torpedo-boats as fast as may be. The discussion again re-opens whenever the question arises as to what pattern shall be employed for the next fighting-vessel. The question would seem to be decided for us, as the torpedo-boats 63 and 64 have given evidence

of remarkable naval and military qualities. This is not the case, however. The torpedo-boats had no sooner returned from scouring the Mediterranean in every direction and in all weathers, than M. Gougéard, in the pamphlet we have just quoted, accuses them of being "nutshells" incapable of really facing tempests and holding their own on the sea, and he proposes to substitute for them what might be called a giant torpedo-boat with an armoured deck 95 *mètres* long, a mean draught of 4 m. 50 and a displacement of 1,780 tons. And this disposition to augment the dimensions of torpedo-boats has not only shown itself in controversy, but also in practice, and has exercised an important influence in our constructions.

At present we have torpedo-boats of 350 tons; we shall soon have them with a displacement of 1,200 tons. England has outstripped us in this path; she has gone with a bound from the small torpedo-boats to the *Polyphemus* of 2,640 tons displacement, and 73 *mètres* in length. If this movement towards increased size continues, if from scout torpedo-boats we come to despatch-torpedo-boats, then to torpedo-boats with armoured decks, we shall at last, by perfectly logical sequence, arrive at the monster ships of the present day. If this is to happen, it would be better to keep on with the existing state of matters, and to continue wasting the millions of our Budget until the next war.

The reason given for thus increasing the size of torpedo-boats is, that they are judged incapable in their restricted dimensions of risking the pursuit of ironclads, and that they are at the same time quite unprotected against the fire of these ironclads. It is desired to make them more thoroughly sea-going; more commodious for the crew, and less vulnerable to the enemy's bullets. The hopeless chimera of invulnerability so long pursued in giant vessels since ironclads were invented, is now being attempted for these very boats which are destined to destroy all chance of it in the former. Nothing shows such a want of common-sense. It is not that the little torpedo-boats are not blessed with a sort of invulnerability; but we should take the conditions well into account that cause them to be invulnerable. To escape being captured by the enemy they have three essential qualities; speed, number, and small dimensions. Their speed gives them the choice of the moment of attack, enables them to strike suddenly upon the enemy, and fall upon him so swiftly as to prevent his hitting them or fleeing before them when he feels unable to offer resistance.

By the confession of every sailor, speed is now the best weapon. Thanks to its speed, the *Huascar* accomplished exploits in the

war between Chili and Peru which made the name of the unfortunate Admiral Gran famous; but when Fortune betrayed it, when, taken between two fires, this heroic ship, deprived of its officers, covered with blood and ruin, was obliged to give itself up to the Chilians, notwithstanding its armour and large but useless artillery, the wooden frigate *Union*, its companion cruiser, found means, by its still greater speed, to escape from the scene of battle to continue its adventures, its brave fights and glorious enterprises.

Number is a still more important guarantee of invulnerability. In truth, what does it matter in a fleet of torpedo-boats if several come to grief when others, reaching the goal, annihilate the enemy? The destruction of two or three torpedo-boats cannot in material loss equal the destruction of a first-class ironclad. The loss in men is not greater than what would be produced on the same ironclad by a lucky shot sweeping its decks, or destroying the officers and quartermasters in the conning-tower, as happened on board the *Huascar*.

Then, for the price of an ironclad we should have at least sixty torpedo-boats. The squadron does not exist that would be capable of withstanding the attack of such a flotilla even in broad daylight and without being taken unawares. What occurred on the river Min is decisive on this point.

Notwithstanding its excellent locomotive torpedoes, the ironclad *La Triomphante* sank no boat belonging to the enemy, because, retarded by its size, it could not reach the fight in time, and, moreover, it was impossible for it to move cleverly in the midst of a light fleet, on a river much too narrow and shallow for it.

On the other hand, the 45 and 46 torpedo-boats, although only armed with spar-torpedoes, resolutely threw themselves upon the Chinese squadron and inflicted serious losses upon it. One of them was struck by a bullet from a Chinese vessel to which it presented its broadside.

If, instead of having to do with untrained artillerists, the torpedo-boats 45 and 46 had been face to face with European artillerists, probably both would have perished at the first attack; but if other torpedo-boats had immediately followed them, these last would have hit the enemy before it had time to reload and fire another round at them.

Now the torpedo-boats 45 and 46 are obliged to get close to the sides of a vessel before they can blow it up. The greatest speed of the torpedo-boats 63 and 64 is, on the contrary, two knots in excess of that of patterns 45 and 46, and they can discharge their torpedoes at 200 and 400 *mètres* distance.

In a squadron fight the first line of torpedo-boats would risk being destroyed in broad day-light; but, whilst they disappeared, the second line would certainly annihilate the iron-clad squadron. Number and speed are, therefore, special conditions of invulnerability, as they do not merely apply to each separate instrument of warfare, but to the united strength of these instruments.

Small size is of the same importance as a means of safety. A miniature torpedo-boat need only present its bow to the enemy, which means such a small target that it would be very difficult to hit it. The smaller the torpedo-boat, the fewer risks it runs, and the less it is exposed to perish.

It is therefore clear that the first condition to be observed in building a torpedo-boat is to keep it within the smallest dimensions. It is utter folly to exact more from it than that it should be capable of going anywhere or in any weather, and that its military equipment should be conveniently arranged for managing the vessel. But navigation on the small boats is supposed to be a chimera. This is to forget the history of all the ancient flotillas as related by Admiral Jurien de la Gravière; it is, further, to forget that Christopher Columbus crossed the ocean and discovered the new world in simple caravels.

Whatever may be advanced, the torpedo-boat of 33 *mètres* and 45 tons is a thorough sea-going vessel, and fit for any voyage. We must acknowledge that they are not at all comfortable quarters, and that the torpedoes are so cramped for room that it is very difficult to work them. It would have sufficed to give the boats 36 or 37 *mètres* to remedy this disadvantage. The first were of 41 *mètres* and 71 tons. There would be nothing to complain of if this last pattern were adhered to, and were the limit, instead of the beginning of increase of size.

The torpedo-boat of 41 *mètres* would still be very small, but no one would venture to say that it could not face the ocean. Let us, therefore, accept it as our definite type in the future.

We would only ask that equal speed should be bestowed on it, as on those of patterns 63 and 64; say a maximum of 21 knots. But we mean real speed, not merely that obtained by experiments. In the trials made, fully-laden vessels are not referred to, with their crews, fittings, and *matériel*. The result is that the true speed is always a little short of the official speed.

For instance, a torpedo-boat having made 21 knots in the trial trips, only makes 19 or even 18 when fully equipped. Now, as speed is the first condition for the success of a man-of-war, any mistake as to speed is of incontestable importance. It is to be hoped that

our torpedo-boats will not stop at 21 knots. Torpedo-boats have already been spoken of as making 25 knots. Boilers are further talked of which will ensure this increased speed, and these are known as the Belleville boilers. They are lighter than the others, and can stand a pressure of 12 to 15 atmospheres, whilst the present boilers cannot exceed 9 atmospheres; lastly, they can be heated by sea-water without risk, and cannot explode. They ought to be tried on one or more of the torpedo-boats about to be constructed. The real motto of the modern navy should be "Speed, more speed, and yet more speed."

4.

In dealing a mortal blow to the ironclad, the advent of autonomous torpedo-boats, armed with locomotive torpedoes, at once puts an end to the race which has for some years gone on between the ironclad and its guns.

As soon as the armour has disappeared, shattered by the torpedo, the big gun will no longer have any function to fulfil. It might, indeed, be employed against protected batteries at the ports or on the coasts; but this would be to condemn itself to certain failure. For, although there may be limits to the endurance of armour on the sea, and if in consequence the moment is sure to come when the shot will perforate the armour, it is by no means the same thing on land. Defensive works can be protected for ever. Walls of sand can be utilised to raise works with terraces, into which big bullets may sink without doing the least harm; as happened in the case of the English at Alexandria.

We shall probably witness a revolution in the art of defending ports as well as in the art of fighting on the open sea. Henceforward this defence will be chiefly carried out with torpedo-boats coming suddenly out from the indentations of the coast, and roaming about to arrest the course of the assailing squadrons. What will be the use henceforth of monster guns at such a high price, and still more expensive fortifications to contain them?

If we persist in the present system of defence, it is plain that coastal warfare will chiefly consist in burning the open ports and unprotected towns, as it will have become impossible to attack strongholds.

It was proved at the bombardment of Alexandria that, the formidable artillery on the *Inflexible* and the other ironclads produced but little effect upon the big guns mounted behind the epaulements without embrasures, or on the disappearing gun-carriages on the Moncrieff system.

Those most competent to have an opinion, judged that given a *personnel* equal in number and skill on both sides, a fleet composed of the best ironclads afloat could not obtain a victory that would compensate for the dangers to which she would be exposed in a duel with fortifications.

"If the Alexandrian forts," says the *United Service Gazette*, "had been armed with better guns, like those to be met with on the German and French coasts, and if the guns had been served by German or French artillerists, the results of the war would have been very different. Probably a third of our fleet would have been, if not actually sunk, at least disabled and practically lost."

Should the risk of such losses be incurred, when the only naval strength of a great nation consists of a small number of ironclads, which take years to rebuild and repair?

The bombardment of Alexandria has further demonstrated that if the big guns of an ironclad risked being quickly disabled by the resistance of the forts, the only method of doing them serious harm was to use the small artillery carried on swift vessels.

Observing that the fire of Fort Marabout was annoying the inner division, the commander of the gun-vessel *Condor* took advantage of her light draught of water, advanced so as to get within range of the fort, and opened fire, taking care to present the smallest possible surface to the enemy. The latter concentrated fire on the gun-vessel, but could never succeed in seriously damaging it. The commander of the *Condor* had placed a Nordenfeldt machine-gun, which he had borrowed from the *Inflexible*, on his foretop, and the gun belonging to his own boat in the main-top, whilst a rocket-tube was fitted on the bowsprit. With these various weapons he opened fire on the embrasures of the forts. The firing of the Nordenfeldt, chiefly, caused such losses amidst the men serving the guns that they began to desert; three other gun-boats shortly joined the *Condor*, and, following the same tactics, soon succeeded in reducing the artillery of Fort Marabout to silence. Struck by their success, Admiral Seymour hastened to call for the co-operation of the four gun-boats in bombarding Mex, a fort provided with earthworks, which made it a less easy conquest for the big guns of the ironclads than stonework would have been.

Is not this a valuable lesson, and does it not prove that only gun-vessels of small size, considerable speed, and armed with light guns, can for the future measure themselves against forts; not to destroy them, but to silence them by means of lucky shots in their embrasures? Their light draught and their agility enables them to change their position as often as they think fit; to escape from the

fire of their adversary ; and to take the best position for rendering their own efficacious.

At Sfax the water on the shores was so shallow, that our iron-clads were obliged to keep such a space between them that they could only use their turret-guns.

Gun-boats would have got near enough to the shore to fire at short range, not only on the works but on the town.

Henceforward, as fortifications are invulnerable, or, at least, as they can only be attacked through the embrasures, arsenals and towns are what must be aimed at. Small guns will suffice for this purpose.

It has been calculated that the price of the *Duperré* would give us 25 torpedo-boats besides 10 gun-boats, the combined broadside of which would weigh 1,200 kilogrammes, nearly as much as the *Duperré* with a broadside of 1,400 kilogrammes. There would, however, be this great difference, that the firing on the gun-boats being much more rapid than that of the *Duperré*, their 1,200 kilogrammes of shot, passing over the fortifications to fall in showers over the town, would produce the greatest disasters, whereas the huge cannon-balls of the ironclad would probably have as little effect on the protected forts, or on earthworks, as the firing of the *Inflexible* had on the fortifications of Alexandria.

The *Duperré* would be forced by its size to remain out in deep water, and would be exposed to the assaults of torpedo-boats ; the 10 gun-boats, reckoning on their number and speed to escape danger, would rush forward ; some would endeavour to disable the heavy guns and those serving them by the embrasures ; others would fire on the town, would force the channels, and get into the harbour. Several would sink, but, so long as some succeeded, what would that matter ? War cannot take place without men and boats being lost, and surely it is better to lose one or two gun-boats and their small crews than the third of a squadron of ironclads.

If ironclads are driven out of the field by torpedoes, we shall no longer require armour-piercing guns for naval engagements. What we want are guns powerful enough to stop a mail steamer or an unarmoured cruiser, or at most to demolish the present superstructure of ironclads and to destroy the service of the guns.

Far-seeing naval men have long predicted that the most terrible danger threatening the ironclads in any future naval warfare, will be when they are assaulted on several sides at once by a series of agile gun-boats difficult to hit.

An ordinary bullet reaching one of their turrets would suffice to

destroy one of the tubes of the hydraulic system in connection with their guns, and would disable it entirely.

The Germans, who seem to bring the same admirable foresight to bear on naval problems as that whereby they have secured the most powerful military organisation in Europe, are convinced that small guns would be in a position to fight successfully against big ironclads, even if unaided by the torpedo. They go further than we do. They do not ask for several gun-boats—they only ask for one.

The following is quoted from the *Marine verordnungs blatt*, 15th November 1888: "The strength of the big gun is certainly formidable. But would not a less formidable projectile suffice to disable the adversary? The chance of taking correct aim at sea is very remote, as the ship and the object aimed at are both in motion. It is much easier to work a gun of small dimensions, and much easier to hit with it. If a shot misses, the loss is not so great as if it were a projectile of 10, 15, or 20 cwt., from guns of 50, 75, or 100 tons. Besides, each gun is equally exposed to the enemy's fire. One shot in the muzzle is sufficient to disable a gun, and several small guns directed against a big gun in an armour-plated tower, would soon silence it.

"It would be easy for a small vessel armed with three or four small guns, and with its vital parts well protected, to attack a vessel like the *Inflexible* or the *Italia* from astern, and, taking advantage of the rapid firing, further to reckon on a shot hitting the muzzle of its only gun, or else smashing and destroying the unarmoured parts. We do not want monster guns on our beautiful and powerful ships. We ought to adopt guns easier worked and easier served. Let us leave monster guns to giants; they offer too large a target to the enemy's fire, and are too easily hit."

Convinced by these facts, we must first find out the gun we can best utilize for our navy in the system of war we think is to be that of the future. We shall next see on what vessels we must place them. The French navy boasts of eight guns of different sizes, and each gun of the same size represents different models (the 1875 model, the 1880, &c.)

This causes such complications that both officers and men have to go through the most intricate studies and drill. The 16-cm. gun is rather too heavy to fulfil the part now assigned to artillery. It would not suit small vessels. The 14-cm. is not perfect. The 15-cm. gun used by the Italians and Germans would be preferable. But we have not got this pattern, and we must of course, use what we have got.

The destructive effects of the 14-cm. gun are, however, very ample; it is light, and can easily be carried on small vessels; it is easily worked and easily understood. Its projectile, which weighs 30 kilogrammes, will do more damage in a quarter of an hour than the balls from the great guns; for the effect of one monster ball will be supplemented by the number of bullets of a smaller size, and rapidity of fire will compensate for everything else.

It only remains to find an appropriate vessel for the 14-cm. gun. Our opinion is that the vessel should be built on the same principle as a torpedo-boat. It should be endowed with considerable speed, and cost little; so that the pattern may be multiplied. Lastly, it should be made as small as possible, so as to escape the enemy's fire. We want a boat to be very low in the water, and not to draw more than two *mètres* except at the extreme end of the stern, where we might go as far as 3 m. 50 in order to be able to carry screws of sufficient size.

The offensive weapon of this vessel being the gun, its defensive weapons would be its speed and its small size. By its speed, both in proceeding and in evolutions (it would have two screws), it would be free to accept or to reject fighting an enemy less swift than itself; thanks to this speed, it would have nothing to fear from a spar-torpedo, and would, moreover, be in too constant motion for a Whitehead torpedo to hit it, even if we admit that the Whitehead-torpedo, which at present is regulated for an immersion of three *mètres*, and which in this case would pass under its keel without touching it, could be regulated to a smaller immersion without losing precision in firing.

The maximum length of this gunboat would be 60 *mètres*; the width would be a tenth of its length. The light draught would enable it to go through almost any channel, which is what our present men-of-war cannot do. Its armament would consist of two 14-cm. guns, one in the bows, the other midships or a little abaft, besides as many Hotchkiss as could be given her without adding to the estimated draught. We might, perhaps, be tempted to content ourselves with one gun, which would simplify the problem; but we must be in a position to fire in every direction, and not construct vessels which would be too dear in comparison to their reduced armament. The speed of this gun-boat should be equal to that of the torpedo-boats, that is to say, from 20 to 21 knots, later on 25, and, like them, she should take in sufficient coal to enable her to keep up 10 knots for six or eight days. She would not require any masts, except, perhaps, a jury mast, so that

she could get away before the wind in case of injury. Under these conditions the most she need cost would be a million and a half (*francs*). The despatch torpedo-boats ordered from the Maison Claparède and the Forges et Chantiers, which are as nearly as possible of the same size, and are burdened with much more complicated armaments, do not exceed 827,000 francs in price. But the speed of these despatch torpedo-boats is not more than 20 knots, whilst we still keep to the same armament. There would be, in consequence, an increase in the cost of the hull and machinery.

Not being engineers, we cannot pretend to draw out the precise plan of what we will name the 14-cm. gun-boat. We must limit ourselves to a broad outline of the programme. It is not the first time we attempt it, and we have, moreover, been preceded in this path by Admiral Aube, a naval authority of high standing. Being an earnest advocate of division of labour, M. Aube thinks that this great principle should be applied in the navy as in all other human affairs.

In his opinion, the enormous ironclad intended to resist spur, torpedo, and artillery, all at the same time, is not capable of simultaneously using so many different weapons. Therefore he asks that the fighting unities should be separate, that military instruments should be classified and gunboats constructed side and side with torpedo-boats.*

Important and serious objections have been made to his suggestions as well as to ours.

If torpedoes are to have the great speed wherein lies their strength, if they have proved that they can fight against a heavy sea, it is because they are so extremely light. In proportion as they are overloaded their quality of speed and their seaworthiness is lost.

The captains of these little vessels are so convinced of this that they have been heard to complain very energetically of an addition of even 50 or 100 kilogrammes weight. It cannot be sufficiently insisted upon, that if the constructors were able to invent minute torpedo-boats possessing great speed, it was because the armament of these boats was very light. It weighs, in fact, only two tons; whereas a gun of 14 cm., with its equipment, weighs nearly five times as much. This difference in weight is easily explained. The discharging-tube is really a cannon; but its

* See the article on the "Future of the French Navy" in the *Revue des deux Mondes* of the 1st July 1874, and that of the 15th March 1882 on "Naval Defence and the Ports of France."

function is only to send the torpedoes a few *mètres*, so that the discharging force is always very small, and it is not necessary that the tube should be able to bear to any great extent. The torpedo itself contains the power required for its propulsion, in the form of compressed air. It is quite another thing with the projectile. It is only an inert mass, receiving its impulse from the enormous pressure due to the explosion of a charge of gunpowder. To enable the gun to resist this great strain it requires to be very thick, and consequently heavy.

On another hand, if the torpedo weighs more than a moderate-sized projectile, we must not forget that two torpedoes suffice to make a boat a dangerous enemy, whereas a gun would be of no use unless furnished with a considerable number of rounds. The result would be that the supply for a gun of moderate dimensions would weigh a great deal more than the supply necessary to a discharging-tube for torpedoes. The author of a remarkable article "A Criticism on Naval Tactics from the Torpedo point of View," writes: "Hence we can understand how different is the solution of the torpedo-problem to that of the gun-boat."

When a vessel is being built her displacement is known, and the different weights of which she is composed are divided in relation to fixed proportions, from which it is impossible to deviate. Thus, on a swift boat, about 35 per cent. of the gross weight must be reckoned for the hull, 45 per cent. of the total weight for the motive power and condensers, 10 per cent. for the coal.

Thus, only 10 per cent. remains for the weight of the armament, the crew, spare stores, victuals, &c.

This fraction is sufficient for the torpedo-boat, by reason of the limited number of its crew and the relatively light weight of this engine of war.

But, if a gun-boat of equal speed were in question, we should first bear in mind that the hull must weigh at least 40 per cent. of the total, for this strength would be necessary to resist the concussion of its armament. We should thus have only 5 per cent. left to our disposal for the armament, victuals, spare stores, and crew.

Now, the weight of a 14-cm. gun, with its whole equipment, is about 10 tons. A crew of at least twenty-five men would be required to manage the motive power and the armament. We may calculate the weight of these twenty-five men, with their bags, victuals, spare stores, and other *impedimenta* on board, at about 8 tons. This gives us a total of 18 tons, representing 5 per cent. of the total weight, which brings us to the fact that a gun-boat capable of great speed, and only carrying a simple little 14-cm.

gun, cannot be realised under 360 tons. This is a long way behind our torpedo-boats of pattern 60, weighing only 50 tons ! ”

There is doubtless much truth in the observations we have just quoted, and we are far from stating that a gun-boat could be as small and light as a torpedo-boat. We may add that she would be useless if she were. The torpedo-boat must be specially swift and specially small, because it comes close up to the enemy, and immediately under its fire, to attack. But to burn ports or open harbours, to blow up powder-magazines, or even to attempt lucky shots into the embrasures of batteries, the gun-boats may be at distances of more than 400 *mètres*, where they will be far less exposed than torpedo-boats.

All the same, we cannot agree to the figures we have just quoted, and we still maintain that it is possible to construct rapid ships that can carry reasonable guns without giving them too great dimensions.

Indeed, we think we can prove that it is easy to have a swift vessel which shall carry weight equal to $\frac{1}{16}$ th of its displacement. To prove this we will take three cases, which seem convincing. In his pamphlet, M. Gougeard suggests the plan of a vessel which would be, at the same time, a gun-boat and a torpedo-boat. This vessel will have a steel deck, and will be capable of steaming 20 to 21 knots. We are sure that it will fulfil the expectations of M. Gougeard, if approved of by M. de Bussy, the Director of our Naval Constructions. Its displacement will be 1·780 tons. This is evidently far too much for us. But let us see what it is to carry.

According to the author of the suggestion, it is to have: six guns of 10 cm., with equipment weighing 5 tons; eight machine-guns, with equipment, weight, say 5 tons; five discharging tubes for torpedoes, with their carriages, say 5 tons if small torpedoes are used, and 7 tons if big torpedoes are used; ten torpedoes, which will weigh 2·5 tons if they are of the small pattern, and 4 tons if they are of the big pattern; finally, air-pumps and accumulators weighing 4 tons. Thus, the total armament amounts to 46·5 tons or 50·5 tons.

Now, if we remember that this vessel of M. Gougeard's has an armoured deck, seven *mètres* long in the region over the machinery, and four *mètres* forward and aft, and that a deck of this kind weighs more than 200 tons, it will easily be seen that, by diminishing its thickness by one-third, the boat would still be fully protected. But we altogether disapprove of this protection, being persuaded that we should not aspire to making our gun-boats in-

vulnerable by means of armour-plating any more than our torpedo-boats, even in a modified degree.

However this may be, we should have a surplus weight of 70 tons to dispose of. This amount, added to the 50 tons we spoke of, would give 120 tons for the artillery, rather more than one-fifteenth of the total displacement of the ship.

We shall take the despatch torpedo-boats *Bombe Couleverine*, *Dague*, *Dragonne*, *Flèche*, and *Lance* for our second case in point. They were constructed by the Maison Claparède and by the Société des Forges et Chantiers, at the price we have already quoted. In the bargain signed between the officials and Maison Claparède, a bargain arranged, controlled, and approved of by our engineers, we remark that the weight of the hull is to be 40 per cent. of the total weight, the weight of the motive power 25 per cent. of the total, the weight of the coal-supply 13 per cent. of the total.

We may now remark, in our turn, like the author of the pamphlet we have just quoted, that, according to this calculation, we are a long way from the figures which gave the weight of the motive power as 45 per cent. of the total weight. And, in making the same calculations as our opponent, based on the above figures, which are exact and indisputable, as we quote them from an official document, we find that a fraction of 22 per cent. is left for armament, victuals, spare stores, and crew, instead of the 5 per cent. fraction which we were allowed.

With this fraction of 22 per cent. we could easily afford the 7 per cent., that is, nearly one-fifteenth, for the armament. It is about the fraction set aside in the design for the despatch torpedo-boats of which we speak, for the various equipments of these boats, seeing that the weight of these equipments is as much as 19 tons 5 cwt.

We might take a very little from the masts, which we should limit to a jury-mast, and from the anchors and chains, to which a weight of 7 tons is, we think needlessly, sacrificed. The men's provisions might be laid in for a month, instead of forty days, seeing that the vessel only carries coal for ten days, and we should then easily spare 22 tons for our armament, that is, 7 per cent. of the total weight.

Shall we cite another example?

We may choose that of the torpedo-boats, pattern 60, with displacement of about 45 tons. Their armament includes the following weights: two discharging tubes, with accumulators, weighing 1,200 kilogrammes; one air-pump, weighing 400 kilogrammes; and four torpedoes, weighing 1,600 kilogrammes. The whole

about 3 tons 2 cwt.; and this represents 7 per cent. of the total weight.*

We must be forgiven these dry details; they are, of course, rather technical, but indispensable, if we are to escape the accusation of theorising.

We have chosen three complete contrasts from boats of different dimensions, so as the better to prove that a fraction of 7 per cent. may always be calculated on for the armament of a swift vessel. If this armament is entirely composed of guns, the conclusion we come to is that a vessel of 150 tons is amply sufficient to carry a 14-cm. gun. We need no longer be told that a vessel of at least 360 tons is necessary for this purpose. On a swift vessel of these dimensions we could easily place two 14-cm. guns and several Nordenfeldts. To be sure, we should not coal for three months. M. Gougeard will be content if his vessel can make 1,800 miles at a reduced speed of 10 knots. We are not more exacting. We only aspire to the same speed with vessels of 300 or 350 tons, at most 400 tons, which would not cost more than a million and a half (*francs*) each, and which, aided by torpedo-boats, would be the best instruments of war in the future.

We must be excused if we make another calculation. M. Gougeard has set down, in his pamphlet, that a sum of 130 million (*francs*) are required to complete the fourteen ironclads we now have in the stocks.

Take 14 millions (*francs*) off this sum for cruisers, repairs, outlays, and 116 millions (*francs*) would remain, with which we might construct the best fleet of light vessels in the world. It would comprise forty-five gun-boats with the 14-cm. pattern, costing a million and a half (*francs*) each, and 200 torpedo-boats at 250,000 *francs*. With such a fleet we should be irresistible on the Mediterranean and invincible on the ocean! But the authorities prefer to swallow up millions in the construction of ironclads which never were any good, and never will be! To justify this blindness, it is asserted that we have already seventy torpedo-boats, and that they suffice to defend our shores. This is altogether inexact. Most of our torpedo-boats are old patterns, with a speed of only eleven or twelve knots, and which, besides, are in such a state that if war were to break out to-morrow, we could not make use of them. They are attached to the movable defence of our ports, and they are sometimes used for excursions to see if their machinery is in good order. But their armament has never yet been tried, or, rather, they have never yet had any armament.

* All these figures and comparisons have been verified.

No one knows what kind of torpedo should be used on them, still less is it known what officers could lead them to battle. The *personnel* is as deficient as the *matériel*. None has been got together anywhere except on the *Japon*, on which vessel alone locomotive torpedoes are used. The torpedo-boats of pattern 63 and 64 have gone through excellent practice in navigation and tactics, but have had hardly any in firing.

Every competent person asserts that in case of sudden war we could not put twenty torpedo-boats in line out of the seventy figuring in the official lists; and yet the first shots directed by the small vessels would be the most formidable, and would decide the victory. It is high time to take warning. Two ministerial despatches have been devoted to the study of a project for the organization of the *personnel* of the locomotive torpedoes, and for stoking the torpedo-boats. But it is to be feared that, being sent to separate commissions, this project, like so many others, will be buried in the ministerial records. It rests with public opinion to put pressure on the Government, and to force it to show more decision. However admirable the locomotive torpedo may be, it is a weapon that can only be of service to nations that have studied it and practised its use.

We repeat that we in France have so little knowledge of it, that three-quarters of our navy unhesitatingly deny its efficiency. Even if our seventy torpedo-boats were armed and excellent in all respects, they would not be sufficient for a nation bounded on three sides by the ocean. We should therefore hasten to have a great many more put in hand. As the 41 *mètres*, 71 tons pattern is approved of, torpedo-boats of this class might be reserved for the ocean and for cruisers. Those we already possess, and which are all of an inferior pattern, might be grouped in the Mediterranean, where they might at once be set to work to instruct the *personnel*. There are, perhaps, forty of real use. Would not this be the best use to make of them? As to swift gun-boats—we have none.

Even our cruisers are not swift enough, and the fleet of small vessels we now possess chiefly represents old patterns which reflect but little credit on those who constructed them. They possess no speed, are useless as cruisers, can make no head against bad weather, and are at the mercy of any ironclad or other boat better armed than they are, as their total lack of speed would always prevent their seeking safety in flight. The new patterns have no speed, and are an easy mark to hit. They draw too much water; their only advantage over the older patterns is that they possess better sea-going qualities.

We ask that speed should be the first factor in the place of every vessel to be constructed, and, after speed, small dimensions which will permit us to have a greater number.

But, once again, it is imperative that this fleet should be composed of offensive vessels, of gun-boats and torpedo-boats ; both of which we so entirely lack. Speed is no less essential in administration than in war. If we are to be ready at the decisive moment, we must expedite the construction of all the component parts of the future weapons of naval warfare. Let us remember that administration means foresight, and that in the navy, especially in our navy, nothing can be got without preparation. We are already distanced by some of our rivals. It is only time that we should note this and take warning.

CHAPTER II.

NAVAL WARFARE AND THE ORGANISATION OF NAVAL FORCES.

1.

WE have shown in the preceding chapter that the ironclad, the Leviathan of the sea, may be vanquished by the merest atoms, and can no longer resist the assault of torpedo and gun-boats. It still remains for us to explain what we understand by the maritime warfare of the future, and the organisation of the naval force of a great country like ours, in connection with this subject. This second task is no less important than the first ; it is perhaps more so, for the ironclad must not only be abolished but replaced.

We have spoken of gun-boats and torpedo-boats ; we have seen how useful they would be either in attacking a squadron or in coast operations. But this is not all. We have now to prove whether these new engines of war will suffice in maritime encounters, and whether it will not be necessary to supplement them by vessels of a different type. This done, further inquiry must be made as to the method to be adopted in organising the light flotillas for which we propose to abolish our existing heavy fleets.

The problem is vast and complex ; all the more difficult to solve from the fact that we are not helped by past experience. We need only glance at any modern navy to convince ourselves that in nothing does it resemble those of the past.

Now that they are composed of such varied and heterogeneous fighting units, what have our present squadrons in common with the uniform construction of the vessels of former days ?

A variety of patterns changing from year to year, from nation to

nation, and modified with such rapidity that they are old-fashioned almost as fast as invented, have replaced the old liner, which was the same, always and everywhere.

Progress is so rapid, inventions are so multifarious, that vessels of the most dissimilar patterns are brought together in the same fleet, without any decision being reached as to which type would be the most efficient for naval warfare, and as to what tactics would best unite them in some common action, on which the issue of a great battle, or the destinies of those nations engaged in it, might depend.

To explain the real cause of this naval anarchy, a primary question must be put. What is to be the naval warfare of the future, what are to be its conditions and consequences?

It is, in fact, impossible to know what instruments should be employed when the object to be pursued and the method for attaining it are as yet unknown. Now it is this uncertainty that hovers over the navy. For centuries nations aspiring to naval supremacy had a perfectly clear object in view: the annihilation of rival fleets in one or more of those squadron fights, success in which secured what was called the empire of the sea, to a victorious Power, for a more or less extended period.

Although high-sounding, this magnificent expression faithfully corresponded to the reality.

From the moment that a nation had by a single blow, or by several decisive battles, destroyed all the naval strength that could hold her in check, she was in real truth the mistress of the ocean; she was its sovereign and reigned unrivalled; she did not suffer any other to enter the lists with her.

She had only to blockade the enemy's coasts, to watch the ports, to stop the merchant ships in their passage, to prevent their cruisers getting to sea, and, finally, to keep the enemy in incessant dread of the sudden landing of an army on her shores—a powerful diversion on which the issue of a war frequently depended. This immense and all-important advantage might be secured by one single battle. As there was then only one pattern of vessel, the line-of-battle ship, and, in consequence, only one fighting unit—this same liner armed with powerful guns—it follows that the squadrons were all of a similar pattern; and when one of them had perished in a maritime disaster, it took a number of years to replace, during which the conqueror reigned unquestioned. The latter roamed over the world in full liberty, easily taking possession of a certain number of points for revictualling, and of well-placed fortresses commanding the military and commercial high-

ways. On these it depended, by means of its cruisers, to deny to any other squadron the possession of maritime dominion.

Sheltered by the forts of Malta and Gibraltar, the English fleets commanded all the Mediterranean thoroughfares, making the attempt to force these obstacles impossible without risk of annihilation.

Squadron-fighting was really the chief instrument in naval warfare, as the empire of the sea was attained by means of it. The siege of strongholds was equally of capital importance, as these strongholds dominated, and could close, the great routes for commerce and war.

But usually a Power that had succeeded in banishing rival fleets from the seas, lost no time in blockading isolated forts, and reducing them by starvation. As in the case of Malta after Aboukir, these eventually surrendered when they ceased to receive that help from outside which it was no longer possible to give them.

Thus, once again, the supreme object in the disposition of naval forces was squadron-fighting. And nothing was more simple or uniform than this mode of battle, on which the fate of the world depended.

Victory was obtained by means of tactics more or less skilful, more or less fortunate, and known to all; proved by centuries of experience, based on perfectly fixed rules, on definitely laid down principles, over which the genius of a Suffren or a Nelson might preside in a moment of sublime inspiration, but which nevertheless were implicitly followed by all the fleets advancing to battle as the assured means towards success.

There was but one pattern of vessel, with the gun for its only weapon, and in like manner the wind was the only motive power, permitting but a slight variety of combinations, to be repeated in each successive battle.

If we consult the past, collect accounts of naval encounters, study them critically, as they have often been studied already, we shall see that amidst diversity of incidents, uniformity of weapons has always produced uniform effects. Before falling upon each other, either squadron struggles for several hours, perhaps for several days, to obtain the weather-gage. This attained, the fortunate squadron has the exclusive advantage of speed and superior tactical position.

It is enabled to surround part of the enemy's force, whilst the remainder, rendered powerless by its position, is prevented from giving any assistance in sufficient time to equalise the fortunes of action.

This first manœuvre will almost always decide the fate of the battle, and if the assailant comes out victorious he will doubtless remain master of the situation, for he has only to fall back again on his adversaries and annihilate them; unless these, panic-stricken, and acknowledging themselves conquered by anticipation, shall have preferred flight to defeat as at Aboukir and Trafalgar.

"The two fleets meet," says Admiral Aube, "advancing in line of battle; they first fire at each other from a distance, then at close quarters; the ships are riddled by repeated broadsides, blood streams down the scuppers, the masts fall and encumber the hull fore and aft. The shattered helm no longer directs the powerless ship, boarding has become possible, and has, in some cases, decided the action.

"Amidst the wreck of their fleet the admirals search out the vessels that can still manœuvre. The conqueror will be the one who can count up the greater number. He can achieve the destruction of his adversary if the latter persists in heroic resistance. But the wind changes; night closes in, or some other incident takes it out of his grasp; the fight is not over, it will soon be renewed on another field of battle. Or else darkness has set in, the wind has not changed, nothing has modified the respective chances of the combatants. Or perhaps the tempest has completed the work of destruction so well commenced. Then the victory is decisive; call it Trafalgar if you like, and for ten years England will reign the undisputed mistress of the sea. Her squadrons will blockade all the enemy's coasts, were they even those of Napoleon's Empire, or, in other words, those of Europe; her convoys will fearlessly roam the great commercial highways of the world, and the merchants of Liverpool and London will rule the markets and monopolize commerce."*

This picture is no less true than striking. It is no less correct in the case of decisive victories than in that of fights less disastrous to the vanquished squadron, as inferiority in numbers had been made up for, by ability and a fortunate application of tactics.

Tourville, when forced, at the Hague, to fight with about 40 vessels, 3,114 guns, and rather less than 20,000 men against 100 vessels, 4,000 English guns, 2,614 Dutch guns, and 42,000 men, was able to keep his enemies in check during a whole day, and retired without disaster, thanks to the ability with which he kept the weather-gage, and thanks also to the clumsiness of the English, who, instead of taking the French between two fires, as everything pointed to their doing, broke

* See the *Revue des deux Mondes*, 15th March 1882.

through their line to rejoin the Dutch, from whom they had been separated.

This is the history of the past; the history of a sailing navy; the history of yesterday, if we take it by date, but already ancient history by the conditions that made it possible. Since then two grand revolutions have taken place: first, that caused by steam, whereby the principles of former tactics have evaporated in smoke; and secondly, that caused by the torpedo, which is still more important and of much more radical effect.

Let us examine the first, and, in order to give its full weight to the examination, let us ask tacticians, strategists, and maritime critics what change it has produced in those rules and those methods of warfare just proved to have been absolute, universal, and rigorously scientific. What strikes us above all on this point is the variety of judgment and opinion, the contradiction of doctrines, and what Montaigne would have called a really extraordinary "clashing of brains."

Even the results of the few battles fought in these last years have in no way modified the general indecision. The only squadron fight that could teach us anything, the Battle of Lissa, brought forward no incontestable truth to convince the whole world. It seemed, however, to confirm the prediction of Admiral de Jonquières, uttered many years before, when a mere lieutenant, as to the consequences of the invention of steam: "Thanks to steam, vessels can move in every direction, with such rapidity that the effects of the ram can, and, what is more, must replace projectiles and annul calculations on the cleverest system of tactics."

The futility, or rather impossibility, of clever tactics, and the value of ramming, were certainly the results gleaned by tacticians from the battle of Lissa. But we must not imagine, in consequence, that they have been able to deduce any new rules from it.

Admiral Bourgeois has commented upon the battle of Lissa in one of his most learned memoirs, and expresses himself in the following manner: "We add nothing to what has been said as to the mistake made by the Italian squadron when it took up its fighting formation, or as to the merit of the organisation of the Austrians; but we emphatically assert that neither of these, or even the signal bravery of charging the enemy and sinking him, exercised any decisive influence on the result of the day. Had not this squadron passed through the Italian lines without doing the slightest damage? And was not every vestige destroyed of the former order of things when the great event of the day happened, the grand experiment in ramming, the success of which

almost constituted the whole victory of Lissa and immortalised the name of Tegethof? As in the case of Nelson at Trafalgar, the bravery and energy of the captain were of far more service than the learned combinations of the tactician. No one would venture in future fights to reckon on the happy chance that delivered over the *Re d'Italia* perhaps without speed or guidance, to the decisive blow of the *Max*, but we have endeavoured to show in this memoir* that cleverness and an accurate grasp of the situation on the part of the captain, aided by a precise knowledge of the capacity of his own vessel and the defects of its adversary, can, by suiting the circumstances of the case to his situation, procure for him as brilliant a success."

Thus we see that the battle of Lissa, whilst proving the value of ramming, leaves us in complete uncertainty as to the manner of conducting an attack of this nature. Need we, then, be surprised that, notwithstanding the prophecy of Admiral de Jonquières, projectiles have continued in use, and that the very day after the triumph of Tegethof, guns should have been as much employed as ever against ironclads?

Or need we even be surprised that M. Gougeard,† in his last pamphlet, should have applied the axiom "*When in doubt, refrain*," and gone as far as proposing to give up ramming, and to suppress the ram, so as to secure increased speed? We should therefore conclude, with Admiral Bourgeois, that between two vessels of equal merit the issue of battle will henceforward exclusively depend on the coolness and ability of their captains; and this puts an end to naval tactics.

As we cannot gauge human ability, it is evident that it cannot be made a basis of science.

"In view of a naval action," says M. de Penfentenyo,‡ "it would be difficult to lay down any absolute rule as to the plan to be observed on giving or receiving the blow. An admiral should always grasp the exigencies of the moment, and subordinate the formation of his vessels to the nature of the plan adopted by those he has to fight against."

"Thus," says Admiral Aube,§ in his turn, "an absence of fixed rules, and energetic audacity in the captain secure success, far more than the wisest combinations of the tactician, and, after the first

* Admiral Bourgeois. *Memoirs sur la giration des navires*.

† M. Gougeard. *La marine de guerre, son passé et son avenir*.

‡ De Penfentenyo. *Introduction à la tactique navale*.

§ Admiral Aube. "L'Avenir de la marine Française." See the *Revue des deux Mondes*, July 1st, 1874.

shock, every vestige of former plans disappears in the *mêlée*. A happy chance becoming the decisive event of the day, audacity, coolness, the captain's grasp of the situation, that is to say, his moral qualities, all that is uncertain, elastic, least appreciable, in fact, the unforeseen, these are the last words of the naval tactics of the present day—of that science which ere now had its set principles, and, therefore, its definite rules."

This apparently trenchant and paradoxical conclusion of Admiral Aube's is not merely the outcome of the diversity of opinion shown by strategists and tacticians, but the actual consequence of facts seriously studied.

From the moment that the wind ceased to be an important factor in executing the most difficult manœuvres, and in instantaneously changing all the positions in action, no one has been able to say which is the best line of battle or which was the best mode of meeting the enemy.

The weather-gage has ceased to exist; the only advantage lies in number and speed.

The manner of striking matters but little, for, after a first passage at arms, a first assault in which it is supposed, without, however, the slightest reason, that the vessels will only graze each other, the *mêlée* will be complete, the confusion absolute, and each will have to look out for itself.

(*To be continued.*)

Touch and Go.

A TRUE STORY OF TWO RIDES FOR LIFE.

By Captain C. B. NORMAN.

FOR more than two years I had been employed under the present Sir Charles Macgregor in collecting information regarding the roads which connected Afghanistan and India, for even at the time of which I write—1872—there was a pretty general idea that there were but three passes leading from the Punjaub westward: the Kyber, the Goomul, and the Bolan. Of the second we knew absolutely nothing, in the Khyber we had suffered humiliating experiences, whilst the Bolan was barren and inhospitable to a degree. It is true that Sir Harry Lumsden's mission to the Court of Afghanistan in 1857 had done much to clear away the mists that enshrouded frontier geography, but it was left for Macgregor to discover that over two hundred well-defined roads pierced the Suliman range, and it was Macgregor who so corrected the existing surveys of the Trans-Indus provinces as to enable effectual steps to be taken for putting an end—so far as that is possible—to the raids of frontier clans. All the passes leading to the mountain fastnesses of the independent Afghan tribes were accurately laid down; their very hills were surveyed, and such a mass of data collated that the task of punishing the smallest section of the smallest tribe was greatly facilitated.

For two years my task had been the survey of the country bordering the great Mahsood Wazeeree clan. If we except the Afreedees, they are the most powerful of all the border tribes on our North-West frontier, and had kept the Dera Ismail Khan garrison in a state of unrest ever since the annexation of the Punjaub in 1849. Their raids increased in boldness year by year, and this boldness owed its success to the fact that between us and them lay another clan—the Buttunnis—through whose lands all their marauding parties had to pass, and in whose hills these

marauding parties found a safe shelter. A course very frequently adopted by frontier officials when they wish to bring an independent trans-frontier tribe to reason, is to blockade it—that is, to forbid it access to British territory. These blockades entail endless worry to the garrisons, afford much satisfaction to the civilians, and, whilst, as a rule, perfectly inefficacious, increase the animosity with which the blockaded tribe regards the British Government. I say perfectly inefficacious with reason, for I know it has happened more than once that a tribe has been forbidden entry into British territory in one district, yet granted free access fifty miles to the north; and even if by chance the Deputy Commissioners are agreed as to the necessity of punishment, the recalcitrant clan can always purchase powder and lead, flour and iron, from neighbouring tribes not themselves under the ban of the British.

In 1872 the Mahsoodi were blockaded in Dera Ismail Khan but free to enter Bunnoo, and we had become acquainted with the fact that several passes existed in the range which runs from the Suliman mountains to the Indus, by means of which they could move freely from one district to another without crossing our border. Hitherto only two roads through this range were shown on our maps, and both these were closed by outposts and patrolled by frontier militia. At length, by dint of bribes and cajolery, we learnt that an excellent road entered the hills at the south-west shoulder of the above-mentioned range and debouched into the Bunnoo valley at the north-west shoulder; further, that a path led from this road into the Bain Dhurra, the main pass connecting Dera Ismail Khan and Bunnoo, so that marauding parties could always maintain a watch over the movements of the regular patrol, and thus guard against surprise. A survey, then, of this pass became necessary, and Sir Charles Macgregor directed me to push through it as rapidly as possible, and meet him, before night-fall, at the Bunnoo end.

The road lay through Buttunni territory, and accordingly I was supposed to have free right of way through it; but the Buttunnis were so interested in the success of the Wazeeree raids, and so anxious to keep us in ignorance of their favourite haunts, that Sir Charles thought it prudent for me to dispense with the usual cavalry escort, in order to avoid attracting the attention of the shepherds on the mountains, who, seeing the *pardah* of their hills being lifted, would, in all probability, raise an alarm and plan some means of preventing our exit. It was, therefore, decided that I should go attended only by a handful of Buttunnis who had

been won over to our cause, and who left hostages in Macgregor's hands for my safety, and by a couple of Pathans from the 1st Sikh Regiment, dressed in native dress, but carrying their Enfield rifles. At the last moment a pensioned native officer of the 3rd Punjab Cavalry was also permitted to join our party, and to this fortunate accident I undoubtedly owe my life.

We left our camp at about 8 A.M., my intention being to enter the hills before daylight might discover my party to prowling Wazerees. With the exception of the native officer and myself, the whole party were on foot, and a more motley crew it would have been hard to collect. Some of the Buttunnis were armed with matchlock and sword and shield, others with bow and arrow, others merely with a long knife. One and all looked capable of any crime, and, indeed, if the truth were known, might be regarded as habitual criminals.

The sky was barely tinged with the first faint streaks of early dawn as we reached the mouth of the pass, and we had ascended a considerable distance up its rocky bed ere, from a bend, we saw the sun slowly ascending over the slopes of Shekh Budin. After following the bed of the stream for some six miles, our guides abruptly turned to the north, and soon we found ourselves on the wooded spurs of the Ghubbur mountains, whence a magnificent panorama displayed itself.

Facing to the west the Suliman range upreared itself in all its grandeur, peak after peak covered with eternal snow; but towering above all lay the grand old Tukht, with its then virgin summit. To the north stretched the Bunnoo valley, smiling green and fertile, a very paradise, as Sir Herbert Edwardes said, but a paradise peopled with devils. Between it and Dera Ismail Khan jutted forth the Speenwai range abruptly terminating in the fantastic cliffs of Kafr Kote. Far away to the eastward wound the mighty Indus, bursting through the rocky cliffs of the salt range at Kalabagh, and losing itself in the misty plains of Bukkur; to the south lay the drear inhospitable *putt* of Dera Ismail Khan, extending, without a hill to relieve its dead monotony, from thence to Soinde. There, as my pony buried his nose in the sweet grass, and as I saw below me purling streams full of white trout, and above me the dense pine forests of the Ghubbur, I thought what a sin it was that four native regiments should be cooped up in the inhospitable stations of Bunnoo and Dera Ismail Khan, when here was a site second to none in India. Here was the proper headquarters for the Punjab Frontier Force. But my task was not to correct the mistakes committed by the Board of Administration

in 1849, but rather to amass information which had been at our feet, and which had lain neglected for a quarter of a century; so, contenting myself with a round of bearings at all familiar objects, I prepared to descend the northern slopes of the ridge and rejoin Macgregor in the Bunnoo valley. These northern slopes were dotted with villages, and my movements now, I anticipated, would be closely watched, and might at any moment be arrested; it behoved me, therefore, to walk circumspectly. We had not proceeded far before we came upon a shepherd tending his fat-tailed flock on a grassy down. No sooner did he spy us than, leaving his sheep, he dashed down the hill at lightning speed. In vain did some of the Buttunnis, who recognised the man, call to him that they were friends. He scented the surveyor from afar, and through him the army that was to lay waste the smiling slopes of the Ghubbur mountains, and he was determined to nip that surveyor's projects in the bud. Now nothing was before me but to put a bold face on the matter and descend rapidly. This I did until I came to a long pool of water, over two hundred yards in length, which I judged suitable for an attempt at an "altitude." The pool stretched under a lofty cliff, and on the opposite side was a small village, which commanded us at a distance, I suppose, of about two hundred yards. I dismounted and sat on the edge of the stream for the purpose of taking an observation. Scarcely had I adjusted my pocket-sextant when I noticed the rippling circles of a stone thrown into the water. I turned to one of the two sepoys, Moosa Khan by name (he had been wounded in the shoulder by a sabre-cut at that gallant action at Jerwah in 1858 when the 1st Sikhs held Tantia Topce at bay until Hope Grant picked up the scent again), and told him to warn my Buttunni escort not to throw stones in the stream. I heard him give the order, but no sooner had I addressed myself to my task again than once more the rippling eddies cut my reflection in two. Angrily I said:

"Moosa Khan, keep those base-born men quiet," and again Moosa impressed on the Buttunnis the impropriety of throwing stones, and so disturbing the sahib's consultation with the sun.

Once more I turned to the task of taking an altitude, and once again was my observation disturbed by the unsightly ripples; then, as I turned furious—as the Anglo-Indian subaltern can be furious with what he deems an inferior race—Moosa Khan deprecatingly said:

"Sahib, it is not these base-born who are interrupting you; it is those inimical sons of Satan who are slinging stones; let me

show them that my rifle can kill a man at 1,000 yards, and you shall view your sun in peace."

At the same time the old Ressaldar, pushing his pony up to me, said :

"Sahib, mount. God means to reap a harvest to-day."

There was no mistaking Moosa Khan or the old Ressaldar. They thought mischief was brewing ; and as I rose from the brink of the stream I looked up to the village opposite. There, on the edge of the cliff were three or four men slinging stones—smooth pebbles from the brook—at me as fast as they were able. With the righteous indignation of the expatriated Briton, I said :

"Moosa, tell those children of owls that if they are not quiet I shall burn their village and kill their head men."

"Doubtless you will do so, Sahib," briefly responded the old Afridi ; and he shouted up his threat, garnished with a goodly frame of expletives, to the cliff in front.

For answer we saw a string of men and women, struggling and screaming, push down the narrow path to the stream ahead of us. Instinctively we pushed on, and, as I drew my revolver and held it ready for action, I saw Moosa and Sadi Khan, the two 1st Sikh sepoy, fix their bayonets, cap their rifles, and close up one on each side of my pony.

"For God's sake, Sahib, don't fire," said the Ressaldar ; "the first shot and we are all dead men."

"Doubtless you are right," said Moosa. "The Adjeetan Sahib won't fire unnecessarily ; but the first man that attempts to touch him is a dead man, and, Ressaldar Sahib, before we four are killed there will be many widows in that accursed village."

In the meantime the crowd had surged upon us, and, though death has never been so near me as it was in the succeeding ten minutes, I never think of those ten minutes without picturing myself as in a pantomime. Wild Buttunnis, perfectly mad with rage, danced round on every side ; women, pale with fear, crowded in to stop their fury. With drawn sword a man would dash at me to find himself confronted by a group of chambers of nearly half an inch in diameter, whilst behind him, right in the small of his back, would be the bayonet of Moosa or Sadi Khan ; in his ears would be the exasperatingly provoking accents of his tender spouse, whilst she, pressing past her infuriated lord, would grasp my knee, and implore me, if I loved peace and valued my life, to press on and escape from the place.

"My good woman ! that is what I want to do. Bloodshed I abhor ; but if one of your mankind so much as strikes one of my

party, I will shoot him as he stands, and burn your village afterwards."

"Ocherisher of the poor, and father of the oppressed! I told them so, but they would not listen to their wives. Do men in your country so ignore their spouses? Oh, Sahib, press on and leave us."

And so, step by step, we left the village in the rear, and as it dropped further and further behind, we heard the drum beating to arms from all the neighbouring hills, and we saw men with matchlocks hurrying down the slopes in our rear.

"If the harvest is to be saved, it must be saved now," said the grim old Ressaldar. "Moosa, jump up behind me; Sadi Khan, jump up behind the Sahib; and the one who falls off is a dead man. Now gallop, Sahib, for your life."

"Greatheart," a pony that had carried me through many a stiff bout at polo, and twice won the pony handicap at Dera Ismail Khan, needed no second reminder from my spurs. He had often carried double home from mess, and seemed to think some fresh game of romps was on the *tapis*; and over the stony bed he clattered. Behind us dashed the baffled Buttunnis; but we were soon out of reach of sword-play, and though for a few minutes matchlock bullets whistled unpleasantly close, we managed to elude the pursuit of the most pressing. Still, there was more than one gorge ere we could reach the welcome shelter of Macgregor's camp—more than one village where we might be subjected to such another scene. So on we sped, over ground which in cool blood to walk over would have been cruelty, but now to stumble on would mean death.

Ever and anon we would meet some man with long swinging strides pressing on to meet the drum-beat assembly, and to him my Pathan companions would shout some plausible excuse for our flight and for the tumult above; but in more than one instance, as if awaking to the fact that we were implicated in the tumult, the man turned and treated us to a flying shot from his antediluvian matchlock.

At last, after close on an hour's ride, not only had pursuit ceased, but even the noise of the war-drum had died away. The Ressaldar then checked his pony, and, turning to me, said:

"God has not gathered in his harvest to-day"; and as I tried to frame a suitable answer, I found that my tongue clave to the roof of my mouth. I can find no other term to express my feeling—it was dry and parched, and I incapable of speech. At the moment of passing the village I did not realise my own sensations;

but when I found I could not frame a reply to a simple question, I discovered that there was no doubt about it—I had been in what a school-boy would designate as a *blue funk*.

An hour later I entered Macgregor's tent, and recounted to him my first *ride for life*.

I may add that the Deputy Commissioner, with that sense of justice which pervades the Anglo-Indian military civilian, at once sent up a body of Buttunni militia, seized the head man of the village which had caused me so much innocent enjoyment, inflicted on him a fine of 500 rupees, and decreed the destruction by fire of the place.

* * * * *

Five years had elapsed, and I found myself standing on the ridge overlooking the plains of Zedikhan in Armenia. Below me lay a Russian division, the left wing of the army of invasion; behind, a Turkish force twice its strength in numbers: the one commanded by certainly the best master of the art of handling troops in the field that it has been my lot to come across—General Turgoukassoff; the other by a brave son of a worthy pastrycook, a man of no education and still less military science. Thanks to the courtesy of General Sir Arnold Kemball, the gallant and kindly representative of Her Majesty with the Turkish army in Armenia, I found myself alone with him on the eve of important military movements, and, shielded by his friendship, I was enabled to follow the campaign almost as a member of his staff.

The days of the 14th and 15th June, 1877, were spent by our commander in idle marchings and countermarchings, in vain boastings of the defeat about to be inflicted on the Russians. No attempts were made to cover our front with shelter trenches and redoubts, and so render our position, strong as it was, absolutely impregnable; none to call up three battalions and a couple of batteries lying encamped some ten miles in our rear, and thus add materially to our numerical strength, which consisted of sixteen battalions and twelve guns. In fact, our commander behaved as if, like the governor of Ardahan and the artillery commandant of Kars, he had been bought by the Russians; for he fell back without fighting, from ridge to ridge, until at last he decided on giving battle in a position where we were commanded by hills on every side, and where practicable roads leading round both our flanks enabled the Russian commander to cut off our retreat.

Small wonder, then, that on the morrow, outmanœuvred though not outnumbered, our men early showed signs of wavering. There were the mules laden with intrenching tools and spare ammunition.

but where was the head to take advantage of these valuable adjuncts to modern warfare? Exposed to the admirable fire of the Russian infantry, who, advancing rapidly upon our front and right flank, had entrenched themselves within easy range, the Turks fired their weapons wildly into the air, and their officers encouraged them in wasting ammunition, but took no steps to refill their pouches. Such a state of things could not last. Covered by an admirably-directed artillery fire, not only did the Russian infantry gain positions whence their fire raked our front from flank to flank; but their cavalry early in the day joined in the forward movement, and by noon were ready to convert a defeat into a rout.

It was just at this hour that a Turkish staff officer galloped up to Sir Arnold Kemball to report the death of Mahomed Pasha, our commander-in-chief, and whilst I was searching for our horses, which we had left behind the friendly shelter of a knoll, another A.D.C., dashing up, told us that Djavid Pasha, on whom the command devolved, had given orders for a retreat. A glance at the troops showed how they welcomed the news. Infantry, cavalry, and artillery were all pressing towards the defile through which runs the main caravan road from Persia to the Black Sea, and close behind them pressed a couple of regiments of Cossacks, who were causing heavy losses in the disorganized mass that was now flying down the hill-side. To reach that defile before the crowd of fugitives rendered the passage impracticable was an event much to be desired, and, having found the horses, I galloped up to Sir Arnold and begged him to leave the field at once. That brave old soldier scouted the idea of flight. Coolly lighting a cigar before he mounted, he said he was going to look for Djavid Pasha, and see what dispositions he had made for taking up a second position that night. We were now under a very smart artillery fire, delivered from a couple of field batteries about 1,600 yards distant. The shells were being pitched with consummate accuracy into the crowd of fugitives below us, but, owing to defective fuses, many of them failed to burst, thus the loss was comparatively slight. I in vain urged Sir Arnold to leave Djavid to his own devices, and to effect his own escape whilst there was yet time. I eloquently pointed out the inconvenience that would be caused were he taken prisoner, for a Cossack is no respecter of persons, and in the hurry of a close pursuit it was quite possible we might be, despite Sir Arnold's uniform, exposed to a close acquaintance with Cossack spears. At last, realising how matters stood, Sir Arnold consented to retire, and none too soon, for not only were the Cossacks busy sabreing the flying Turks, but a regiment of Russian dra-

goons, with their flat white cap-covers, were now easily discernible trotting up the slope, and not 800 yards off. Making a wide detour to avoid a party of Cossacks who were actually between us and the defile, we pushed our horses over the stony slopes, and thus keeping clear of the troops were enabled to proceed unimpeded. Shortly after starting we were hailed by a staff officer, who, dashing up to us breathless, warned Sir Arnold that Circassian spies had just informed Djavid Pasha that a troop of Cossacks had been specially told off for the capture of the English general, and that we must keep a sharp look-out for these gentry for the first few miles of our retreat. I think this news decided Sir Arnold to press on more briskly, and our trot was changed to a hand gallop as we saw some Cossacks leave the flying infantry and turn off in our direction. Some ill-directed carbine shots, which whistled over our heads, evidently from this party, only induced us to move the faster, and, taking a pull on our horses, we put them at the hill before us. We were neither of us heavy weights, and we were both fairly mounted on Arab horses, which the campaigning of the past month had brought into good condition.

With a start of 800 yards, we had little to fear, unless, indeed, a chance shot should hit one of our nags, and it was to be preserved from this accident that I most fervently prayed, for now there was no doubt as to the intentions of the Cossacks, whose guttural shouts were distinctly audible, and whose carbine bullets whistled inharmoniously overhead. The hills in our front were dotted over with fugitives; here a group of Turkish infantry, destitute often of arms or accoutrements, were endeavouring to make over the mountains to a flank, there a party of brown-coated Circassians galloping madly along the road towards Erzeroum—here a solitary officer fleeing as if from the wrath to come, and, in rear of all, destitute of all formation, all order, and all discipline, a shapeless, inchoate mass of footmen and of horsemen, guns and waggons, baggage animals and creaking arabas, the remnants of the right wing of the Turkish army. Close by, though avoiding the immediate vicinity of the mass of the army, we passed through groups of stragglers numbering certainly several hundred men. These stared at us with true Oriental indifference; and though Sir Arnold's figure and uniform must have been familiar enough to many, no attempt was made to check our pursuers. As we neared the summit of the Taghir Pass, I saw that we had gained considerably on the Cossacks, but, what was of infinite more moment, was the sight of a long serpentine mass of infantry winding up the pass below us. The three infantry battalions, the arrival of which

the night before might have saved the day. If we could gain them ere the Cossacks overtook us, our safety was assured. So, taking a fresh pull at our horses, we dashed down the pass.

As our pursuers reached the summit they, too, saw our deliverance at hand, and saw, too, that they were now between two fires. Trusting, however, to the stoical indifference to prompt action which characterises the Turk, the Cossacks dismounted and treated us to a series of volleys as we disappeared from view behind a distant bend. It was with a feeling of relief that we eased our nags and walked them down to the approaching regiments. To the officer commanding Sir Arnold related the day's disaster, and suggested that he should form up his force at the crest of the pass to cover the retirement of the main body. The gallant Turk seemed in no way disconcerted at the announcement of the defeat, nor in any hurry to take steps to aid his comrades. So, leaving him to follow his own devices, we continued our journey towards Erzeroum.

Having shaken off our pursuers, we felt justified in considering ourselves safe, and, on reaching a shady grove at the foot of the pass, dismounted, and, whilst discussing some dried tongue and bread, gave our good horses a feed of corn. I remember I was in the act of cutting a lemon in two when I heard a couple of shots to our left front, and, looking up, saw a Turk galloping towards us, followed in the distance by a knot of horsemen. "Cossacks, for a thousand," said Sir Arnold quietly, as he unbuckled the nose-bag from his horse, and prepared to mount; and so it was. A second party of Cossacks had been sent round by another road to cut off our retreat, and our unfortunate halt had just thrown us into their very teeth. We were now some four miles from the village of Thaikhohjeh, where there was an infantry regiment and a battery, so it became once more a race as to whether we should reach its friendly shelter before our fresh horsemen overtook us. Fortunately, we knew the ground, and had with us a Turkish orderly, who, without a moment's hesitation, turned off the main road and led us up the smooth hill-side, thus enabling us to gain considerably on the Cossacks. Still, they were far too near to be pleasant, and I, for one, could feel that my horse was not going nearly as strongly as when we left the field of Taghir, and more than once the thought struck me that I should certainly see Tiflis before I saw Erzeroum. Indeed, at one time, as we cleared the crest of a range some two miles out of Thaikhohjeh, and, owing to the heavy boulders, were forced to save our horses, I do not think the Russians were more than a couple of hundred yards off. Once

more fortune favoured us, for beyond the boulders stretched a long expanse of springy turf, and here the stride of the well-bred Arab began to tell; slowly we drew away from them, and then, settling down in our saddles, fairly raced them to a standstill. Now we felt that all danger was past, for, as the tents of the Thaikhohjah garrison came into view, the Cossacks treated us to a parting volley, and then, turning their horses' heads, rode over the hills towards Taghir.

That night we passed in the comfortable shelter of the Telegraph House at Khorassan, Sir Arnold penning his despatches to Government, I recounting my experiences for the readers of the *Times*. The Turks, jealous of evil tidings, took care that neither the official telegram nor the press message reached their destination, and in this Mookhtar Pasha exercised a wise discretion. He determined, on learning of the defeat, that he would make one bold bid for success ere the Porte should learn the news of the disaster in Armenia. He knew that the Russian forces were not strong enough to venture on a vigorous pursuit, and, ordering up every available man and gun from Erzeroum, he moved rapidly across, the following night, to where Djavid Pasha was busy rallying his dispirited men. The presence of the gallant Marshal infused fresh life into the panic-stricken Turks, and on the 21st of June, five days after they had received a crushing defeat, the Turks, this time under Mookhtar, drove back Turgoukassof over the heights of Eshek-Khaliass, through the defile of Taghir, and, pressing him step by step across the plains of Zedikhan, never loosed their hold on him until he was fairly ousted from Turkish territory.

Since these scenes were enacted many stirring events have taken place on the respective frontiers of Afghanistan and Armenia. Russian intrigues have altered the conditions of life in both countries, and it is more than probable that the readers of these pages will, ere many years are over, witness British armies face to face with those of the Czar on the waters of the Araxes as on the slopes of the Suliman range. May I be there to see the fray.

Military Railways in Germany.

By OTTO WALDAU.

No Continental State has paid as much attention to the service of military railways as Germany; particularly since the conclusion of the Franco-German War, which had given the most unmistakable evidence of the great value of this service during warfare.

Until 1870 the idea which governed the organisation of strategic railways concentrated in the attempt to amalgamate the military and technical elements as far as possible. For this purpose a so-called executive commission was framed with the function to act as the necessary medium of intercourse between the railway and military authorities.

This commission included two officers of the General Staff and a superior railway official, all stationed at head-quarters. They received their orders direct from the central military office; whereas every army corps had an extra commission of the line, consisting of one officer of the General Staff, assisted by a railway official of high rank, who were placed under the first commission. To watch the exact execution of orders referring to army transports in conformity with pre-arranged time-tables, and to ascertain that all necessary railway rolling-stock was placed at the disposal of the military commanders, formed the duty of the second commission. Field railway divisions were organised in its service, each of which was headed by an officer of the *Corps de génie* and a superior technical railway *employé*, who appointed from the railway staff two first-class engineers, six to ten of the second-class, two engine-builders, under whom eighty to a hundred men of the military pioneer regiment, and a number of assistants—according to circumstances, either soldiers or civilians—were placed. The necessary materials for the construction of the line and the rolling stock were either procured by free contract, or ordered to be sent from the nearest railway head-quarters to a central or branch dépôt office. The latter took charge of all

mechanics belonging to the railway, and the largest or central depôts, being generally placed at important junctions, were used, at the same time, as stations for the pioneers.

As soon as the field railway staff had fulfilled its object, viz. to reconstruct what had been destroyed by the enemy, it followed the advancing columns and left it to a traffic commission, instituted by the Prussian Minister of Commerce, to make arrangements for re-opening the line, after men and rolling-stock required for its service had been procured by the said Minister. The management of such railways was entirely entrusted to these commissions during the whole time of occupation.

It is due to the intelligent co-operation of the army and technical railway service that a network of lines of about 1,400 English miles, occupied by Germany during the Franco-German War, could be worked to such perfection that no hitch occurred in the unopposed transport of reserves and in the transmission of supply and war materials.

But notwithstanding the excellent service of the field railway divisions, it was evident that the total organisation of the German war railway system was somewhat wanting in unity. The respective functions of railway officials and military commanders were not sufficiently defined, a shortcoming which prevented the managers of different railway lines from working together in complete harmony, and was also the cause of differences which these managers had with the army railway service as well as with the commissions. The circumstance was thoroughly investigated after the war, and, as a result, reforms were introduced with a view to institute a service efficient to undertake the transport of immense numbers of men during times of war, at the shortest possible notice.

The prevalent idea in organising the present German military railway service (which owes its development to the experience made fifteen years ago) consists in utilising to the utmost capacity the large contingent of men who annually enter the army, after having previously been in the employ of railway companies. They possess practical knowledge of the service, and of all other branches connected with railways, and are therefore a very valuable acquisition.

By thus increasing the military element it is, however, not intended to dispense entirely with technically qualified civilians; they will continue to be employed and allowed to act with complete independence as far as technical questions alone are concerned. In all other respects their colleagues of the army will have prece-

dence. The present arrangements in the management of railways bear a somewhat warlike character even in times of peace. Military authorities are always on duty, and fulfil distinct functions. The additions to railway troops, which are continually proceeded with, form the nucleus from which during a war the imposing and complicated system is developed which distinguishes this branch of the army service.

The Grand General Staff has a special department, called Railway Division, by which during times of peace all questions referring to the army railway service are considered and decided. Special attention is given to all details concerning military transports, and, as every member must have a superior knowledge of all railway lines, particularly of their capacities for service both at home and abroad, the division is qualified to make the most minute preparations—on paper—for expeditions on the largest scale, and for the transmission of all orders to be given as soon as war is declared.

In order to divide the work and to limit its different spheres of activity, the department has several sub-divisions. Their functions comprise all branches of the entire German railway system, *employés* as well as rolling stock and traffic arrangements. As the concentration of a large army by means of railways requires the assistance of an important number of officers belonging to the General Staff, most gentlemen of this service are transferred from time to time to the Railway Division Department in order to become practically acquainted with this important branch of the army system.

In the Berlin division superior officers act as commissioners to certain railways, each having the management of a main, secondary, branch, and side line. They are bound to watch that all lines are in good repair; must verify the completeness and satisfactory condition of the rolling stock, and ascertain that the necessary arrangements for army purposes are always in perfect order and at any moment ready for war.

The commissioners to the respective railways facilitate the intercourse of the General Staff with the civilian managers of the lines, and are stationed at important centres of traffic, viz. Karlsruhe, Frankfort-on-the-Main, Schwerin, Hanover, Düsseldorf, Breslau, Cassel, Elberfeld, Bromberg, Dresden, and Munich. They report to the military authorities all mistakes and deficiencies which they find out on their tours of inspection, in order that adequate improvements may be made by the railway directors. During a war, the duty of removing all difficulties which are likely to impede the

quick transport of troops and stores, and of regulating the general traffic, devolves upon the commission of the line. It controls the proper execution in accordance with the great tables of conveyance issued at head-quarters, and makes all arrangements for keeping the rails free for the extensive work.

The institution of a permanently active military railway service, as well as the formation of railway troops as integral parts of the regular army, are creations of the period immediately following upon the Franco-German War. The experience gained during its duration had clearly demonstrated that insufficiently-prepared field railway divisions, six of which were formed only in the moment of need, were scarcely in accord with the fixed arrangements of the mobilised army. It was, therefore, urged that the technical railway service should be transferred during a campaign to men of military training, prepared for it during times of peace, to whom all necessary preparations for equipment, &c., in case of action, could confidently be entrusted.

This new branch of the army service began its existence on the 1st October 1871, under the name of Railway Battalion. Its original object was to be in readiness for the army of occupation which still remained in France, and it should also be the first step to the formation of the necessary corps for railway service, which should be thoroughly instructed in all branches of this peaceful pursuit in order to be competent to conduct the entire service at a time of mobilisation. A second battalion was formed five years later, making thus a railway regiment, to which afterwards the balloon detachment was added as a third division. The transformation into a railway brigade is now expected. The increase of 1876 was as well required for the purpose of instructing an adequate number of men on furlough, experienced in the railway service, as also to comply with the requirements for cadres to the numerous new formations.

In appearance much like pioneers, the railway regiment is principally recruited from different trades connected with the railway service. Volunteers—serving only one year—are only admitted to the corps in case they have either had previous experience in the construction of lines or technical knowledge of engineering. The increase necessary for an eventual mobilisation is drawn from officers and men on furlough, formerly belonging to the railway regiment, from railway officials of the reserve, and mechanics, clerks and engineers. The war strength of the eight companies is 200 men each, or 1,600 in all, whose functions are divided between the construction and the working of lines. The

first class comprises technical constructions and arrangements formerly carried out by the field railway divisions; whereas the latter refers to the management of the entire traffic. To prepare for these very different duties, practical instruction is provided during the summer months to teach the construction of a line under all circumstances, and the men are at the same time employed with repair and extension of existing railways, &c.

All branches of railway construction are practised, including earthworks, plans of stations, the building of tunnels, laying down and charging of mines, and the erection of railway bridges. The great attention paid to the efficiency of this service has been of advantage both to Government lines and private companies, as it has placed at their disposal a considerable number of well-informed servants. During 1872-73, for example, the detachment of the railway regiment laid down sixty-five kilometer rails on different lines, and erected, respectively, improved or enlarged twelve railway stations. The object of the army railway is to school men for an efficient service in the traffic companies which are formed in times of war.

As soon as the mobilisation of the army is ordered, this apparently small contingent of men is greatly increased in numbers and capabilities. The management of the whole railway system, which, in ordinary times, is in the hands of civilians, is at once transferred to an officer of high rank, either a general or colonel of a regiment, who regulates not only the traffic on German lines, but also on such railways of foreign countries which may be occupied by the army for the time being. His commands are immediately given to the railway division under the General Staff, as far as inland lines are concerned, from whence they are communicated to the active commander of railways. As to foreign occupations, the orders of the chief of field railway service are entrusted to military railway directors specially appointed for the management of lines belonging to foreign countries.

The principal object aimed at in the large sphere of activity in charge of the chief of the field railway service is to attain complete unity of purpose. In keeping the different organisations, viz. railway division, commanders of lines, and military railway directors, in constant intercourse, in order that each command might be enabled to take into sufficient consideration the circumstances of the two others, when making its own arrangements, this object is expected to be realised. It is calculated that one railway traffic company is required for every forty to sixty kilometres of line: this body of men comprises a first-

class captain as commander, a first lieutenant, four second-class lieutenants, one sergeant-major, and forty sergeants doing duty as assistant station-clerks, forwarding-clerks, engine-drivers, conductors, luggage and goods clerks, line inspectors and telegraph clerks; further, twenty ensigns for the work of guards, assistants to the telegraph office and to the building office, of stokers and attendants to stationary engines, while 189 pioneers, acting as rangers, porters, engine-cleaners, &c., and being also occupied in workshops, complete the company. Although these different duties are reserved for men accustomed to the same class of work as civilians, they still require to be thoroughly drilled during times of peace, in order to become acquainted with the military system upon which the service is conducted. The general managers of railways are supported by so-called station commanders in the execution of military and police measures. Varying with the geographical position, they are placed either under a military railway director, or—if in an occupied district—under a commander of lines. The station commanders arrange that the railway transport service is efficiently carried on, and they should also try to facilitate the work devolving upon station-masters. They attend to the billeting (housing) of troops, and to their supply of food and other requirements in cases where no special military commissariat is on duty. The security and defence of lines open for traffic is entrusted to the commissariat, which has to protect the free communication from the frontier of a district occupied by the operative army either to the frontier of their own country, or to that part of the line of occupation placed under German management.

During warfare, the eight companies forming the railway regiment are divided into detachments for traffic, and others for construction, the proportion being like three to one.

The companies for construction are qualified to restore destroyed lines and buildings for the purpose of re-opening the traffic, to construct new lines, and lay down circuit-rails, and take the functions of field railway divisions during the war. They follow the army and receive instructions from the chief of the field railway service. Their sphere includes as well the construction of railways as the installation of telegraphic communications. Each company is accompanied by a small column of four to five waggons, twenty horses, and ten soldiers in attendance, carrying the necessary building materials and tools. The traffic companies, consisting of experienced men, attend to the restoration and preservation of the traffic on occupied railways. They are trained during times

of peace in the service of military railways, advance with the army, take charge of the service over thirty to forty-five miles each, and make all traffic arrangements. The experience of the last campaign has led to great improvements, which have been utilised in rendering more exact the military instructions for working occupied lines with a view to keeping up the communications with the active army. The guiding principle of such communications consists in the desirability of having supply-trains, with the most necessary articles, in readiness as movable magazines close to the scene of action ; but these stores are to be limited as much as possible, and all trains must be unloaded without delay. For the purpose of simplifying the complicated intercourse of the reserve districts with the different parts of the army, each corps has its station of exit, where the commissariat service begins and from whence all supply and reserve troops are sent to collecting stations in immediate vicinity of the theatre of war. Both reserves and ammunition trains pass the collecting station with as little delay as possible, in order to prevent the place from being crowded, whereas luggage and goods are unpacked on arrival and deposited in magazines. According to requirements, whole trains are coupled at the collecting stations, and taken to certain places for unloading (commissariat head-quarters), where they are immediately unpacked on arrival and returned empty. The stations for unloading are chosen at points from which good roads may easily be reached for the transport of supply, &c. to the advanced army.

The above short description will show the thorough-going manner in which the German army administration manages to utilise for military purposes the important instruments for warfare which are placed at its disposal in the form of railways.

A Regimental Pet.

A SKETCH.

By YEORAH.

"LUKI" was a staunch Tory, which, perhaps, led to his eventual downfall. He entered the service, so to speak, before the abolition of purchase, and saw many a change in men, manners, manœuvres, and dress—none for the better, from his standpoint. He survived Mr. Cardwell's name on the fly-leaf of the *Army List*; but this and other shocks tended to sour a perhaps not altogether over-sweet temper, rendered him morose and irritable, and finally completed his ruin. He had joined in a chorus of—

May Cardwell no more
Destroy *esprit de corps*,

with guttural grunts, had echoed for many years the cheers on Her Majesty's birthday, and drunk her health in "fine old military"; had seen youngsters come and go without being "drawn"—a pastime in which he was wont to take frequent part—and on his enforced retirement (to put it mildly) his reflections were doubtless leavened with more anger than sorrow. "The service had gone to the devil!" was his latter-day refrain.

A brief biography of poor Luki—for his faults, after all, lay on the surface, and memory can now "gild the past"—may not be without interest. Indeed, it may even point a moral, in these days when an honest expression of opinion is rarely met with. For this alone Luki deserves a niche in the gallery of Regimental Pets.

He was a bear. Not that human species which Mr. Justice Bovill says is to be found not unfrequently on the Bench and at the Bar; but the genuine article, the *Ursus*, the black bear of Cashmere. Of his babyhood little is known, as when undergoing that "licking into shape" by the dam which the ancients

supposed was actual, not metaphorical, his was shot, and little Luki carried off by the "Shikari," whom he scratched violently with all four claws as he was being torn away from the body. Early memories are luckily short, and by the time he had eaten his second plate of honey and milk, he was content to regard M—— of the "Cambrians," whose rifle had disposed of his mother, as his foster parent. M—— brought him back at the expiration of his leave to Mouldypore, where the "Cambrians" were stationed, and there Luki commenced his career as a Regimental Pet.

He was duly christened with a corked bottle of champagne, and his education in the "ingenuous arts" begun. There is little, if any, doubt that he soon completely forgot that he was a bear at all. He evidently considered himself one of "ours," for once, when shown an itinerant dancing-bear, he displayed marked disgust and contempt not unmingled with fear, and, scuttling over to where his "brother officers" (I believe in his mind, or what did duty as such, he so designated us) were standing, said—that is, as plainly as looks could convey words—"Please, remove that obnoxious beast!"

During his "sub"-hood (his promotion, like that of Princes, was rapid) he showed none of that bearishness so common to man and the lower animals when put out; but was always polite and gentlemanly in his behaviour, even to drinking a bottle of lemonade (he hated "untainted" aerated waters) to oblige a lady. I regret to say, however, that although not having quite taken to drink, yet he liked his "whack," and this he got in the shape of the corked-bottles and heel-taps after "big nights," when he was always brought into the ante-room to drink "the Queen." He would be very grumpy the next morning, sitting in his tub like Diogenes; his head resting on his paws, body swaying to and fro, and grumbling after the manner of bears as he sucked his claws. His growls always increased if "The Hydropper," as the only water-drinker in the regiment was called, passed by, for he detested teetotalism. A soda-and-brandy (the latter predominant) would put him right; and little H——, his especial ohum in the "Cambrians," never failed to administer this to him. No wonder he felt grateful and would follow him like a dog, protect him if anyone even pretended to strike him, and invariably join in from without whenever little H—— (who was fond of the sound of his own voice) sang at suppers. The effect was rather discordant, neither of them having what is called an ear for music; but goodwill made up for defective harmony. Then he would attend

parades, "assist" at the "drawings" of unpopular youths, appear on the stage and go through his limited *repertoire* of tricks in aid of Army charities, drink whatever was given to him, and do all that lay in his power to uphold the honour of the Regiment according to his lights, especially at General's inspections. He would in all probability have preserved this somewhat negative amiability of disposition to the end of his days, had he not been unsettled by Mr. Gladstone, whose disturbing influence reached even old Luki.

The abolition of purchase, in such a way too, was a terrible blow to him. He heard, moreover, that a young officer, a Cardwellian, perhaps not thirty inches round the chest, had actually complained of his share of the Bear's wine bill! No doubt the mess waiters, in some degree, helped to swell the items in this; but then no one hitherto had asked any questions, and now there was every probability of his allowance being literally cut down to the very dregs. This made him peevish, and he took to showing his likes and dislikes more openly. Then a new mess-president, a captain who had only exchanged into the Cambrians, was installed, who said that Luki destroyed the flower-beds in the compound—he was given to re-arranging them after his own fashion, I admit—and went so far as to have him delegated to a pit like a common zoological specimen. Here little H—— and he would hug each other, and mingle their brandied and watered tears in maudlin, regretful sentiment over "the days that once had been."

Little H—— seldom omitted to go through this performance, and to say "good-night" to Luki before retiring to rest; and the bond of friendship between them became more closely cemented than ever. One day a terrifying rumour reached Luki. The "Cambrians" were no longer the "Cambrians" of yore, but had become territorialised into another corps, and their facings changed. He was restless all day, anxiously awaiting his nightly interview with little H—— who would be sure to tell him the truth. Little H—— came as usual, went down into the pit, but what subsequently took place no one exactly knows. The sergeant of the mess-house guard stated he heard a deal of cursing and swearing going on, and then a loud shout. He ran down to Luki's pit and found him, wild with rage, mauling poor little H—— who was lying on the ground, and whom he had the greatest difficulty in extricating from the bear's clutches. Little H—— was very ill for a long time from the effects of his struggle, but he was always loyal to Luki. When questioned, he "supposed it was the change of facings that must have irritated him, that he had (being on an

economical tack) offered him a half-glass of whiskey and soda, instead of his usual Justerini Brooks' brandy, and that" (and this, I think, must have been the real cause of the grief) "while they were hugging each other the lighted end of his cigar had burnt Luki's nose." Howbeit, from the hour of his assault on his friend, Luki gave way to violence and passion, and even showed disrespect to the Colonel's wife. It was, therefore, decided to try him formally for mutiny and insubordination. A court-martial sat, and, alas! the members (of whom "The Hydropper" was President) found him guilty, and sentenced him to be shot. They, however, recommended him to mercy on account of his "former meritorious service," and the confirming officer commuted the sentence to imprisonment for life in the Zoo of a local Rajah. Here poor Luki pined rapidly away, and died a victim to his principles.

“On Leave.”

HER Majesty the Queen has been most active during the last month, and the welcome she has received on all occasions from her subjects and the colonials must convince Her Majesty of the thorough loyalty of both, and that Union and Federation are uppermost in the minds of the majority. Commencing with the opening of the Royal Holloway College at Egham, which was attended by thousands of people, the Queen, in reply to the address which was enclosed in a casket, the work of the Goldsmiths' Alliance, said: “In opening this spacious and noble building, it gives me pleasure to acknowledge the generous spirit which has been manifested in the completion by voluntary efforts of a work promising so much public usefulness.” Who shall, hereafter, cast a slur on Holloway's pills and ointment, which has enabled the late Professor to give so noble a gift to his country?

The Royal Review at Aldershot was also attended by Her Majesty, who had not visited the camp since 1882, prior to the departure of the troops for the first Egyptian campaign. The total field strength of the troops reviewed by Her Majesty was 14,478 men, 2,376 horses, and 56 guns, commanded by Sir Archibald Allison. The review, which was primarily organised on behalf of the Colonial visitors, afforded them an opportunity of seeing something of the warlike resources of the little island which they regard as home. For a full account of the manœuvres I must refer my readers to the excellent description by the military correspondent of the *Observer* for July 4th. No incident, I may observe, gave, on this occasion, greater gratification than seeing the Prince of Wales taking his place at the head of his regiment—the 10th Hussars. The cheers which broke from the spectators as Her Majesty drove on to the ground, must have convinced her that the representatives of “England beyond the seas,” equally with the inhabitants of the “lesser island,” were indubitably Unionists, and preferred a limited Monarchy to disruption. On the 6th July the Queen received, at Windsor Castle, the representatives of the Colonial and Indian Exhibition, where they were magnificently entertained. Luncheon was served in the Waterloo Gallery, after which the Queen received the guests in the Reception Room, where they were presented to Her Majesty by the Prince of Wales. On Saturday the

10th July, their Royal Highnesses the Prince and Princess of Wales gave a garden party at Marlborough House to the Queen, and on the 15th July Her Majesty accompanied Prince and Princess Henry of Battenburg, and paid her second visit to the Exhibition, and visited the Durbar Court, where the natives were at work, the Ceylon, and the Malta Courts, the British Guiana Department and the Straits' Settlements. No one can hereafter say that Her Majesty takes no part in public ceremonies and does not go sufficiently among her people.

The Colonists have had a pretty busy time of it, and have been fêted everywhere, both at the garden party at Sandringham by the Prince of Wales, by Lady Burdett Coutts, the Duke of Northumberland, the Duke of Westminster, the Earl of Carnarvon, Sir Thomas Brassey, and Mr. Walter at Bearwood, to say nothing of State balls and concerts, the University and Public School cricket matches, the Henley Regatta, the contest for the Lawn Tennis Championship, and the very enjoyable visit to Stratford-on-Avon, where they were entertained at luncheon by the mayor, Sir Arthur Hodgson, K.C.M.G.

Sir Charles Warren is to be congratulated on having issued a notice on the Dog Regulations, which reminds us that the rule for muzzling or leading dogs in London is no novel outrage. The police regulations are simply the enforcement of the Dogs Act of fifteen years ago.

Lord Wolseley, who presided at the annual meeting of the Royal Society for the Prevention of Cruelty to Animals, said, "He thought it would be a very unfortunate thing if it were supposed that the Society, in their great desire to benefit the dumb creation, were entirely indifferent to the interests of the speaking part of the community. . . . He could give no professional opinion of his own, but from hearing many views expressed, he had formed the opinion that the rabies could be stamped out quite as effectively as small-pox was by vaccination. He was sorry dogs had to be muzzled. It was a horrible necessity, but he believed it to be a necessity which all right-minded people in the country would adopt."

Dr. Wendell Holmes, our welcome guest, thus writes on his "prospective visit" to England before leaving the States, in the *Atlantic Monthly*:—"It is a Rip Van Winkle experiment which I am promising myself. The changes wrought by half a century in the countries I visited amount almost to a transformation. I left the England of William the Fourth, of the Duke of Wellington, of Sir Robert Peel; the France of Louis Philippe, of Marshal Soult, of Thiers, of Guizot. I went from Manchester

to Liverpool by the new railroad, the only one I saw in Europe. I looked upon England from the box of a stage-coach, upon France from the *coupé* of a diligence, upon Italy from the chariot of a *vetturino*. The broken windows of Apsley House were still boarded up when I was in London. The asphalt pavement was not laid in Paris. The obelisk of Luxor was lying in its peat boat in the Seine, as I remember it. I did not see it erected; it must have been a sensation to have looked on the engineer standing underneath, so as to be crushed by it if it disgraced him by falling in the process. As for the dynasties which have overlaid each other, like Dr. Schlieman's Trojan cities, there is no need of moralising over a history which, instead of *finis*, is constantly ending with, What next?"

The vacant *Bâton* has been conferred upon General Hon. William Paulet. The new Field-Marshal has seen service in the Crimea. He has the medal with four clasps, and for his services was given the C.B., third class of the Medjidie and Turkish medal, and was created an officer of the Legion of Honour. Lord Paulet has passed over, among other officers, Lord Lucan and Viscount Templeton. In military club circles it was thought Lord Lucan would have been the recipient of the honour.

The Field-Marshal Commanding-in-Chief has selected Major-General Redvers Buller, V.C., Lieutenant-Colonel the Earl of Dundonald, and Major J. R. Slade, R.A., to attend the French Army Manœuvres in September.

The inspection at Sandhurst by the Duke of Cambridge passed off exceedingly well. The cadets, who numbered 900, evidently pleased His Royal Highness. Their marching past in column, in quarter-column, and at the double were in faultless style. His Royal Highness impressed on the future officers of the army that there was always something to learn, and that, as in sports, anything fresh was watched with keen interest from day to day, so in the art of war officers could always learn something fresh, and gather knowledge from all parts of the world, for one was never too old to learn something.

The forthcoming Naval Evolutions, for the purpose of welcoming and entertaining our Colonial and Indian visitors, promise to be a very grand entertainment. A comprehensive programme has been published, together with a diagram illustrating torpedo practice at Stoke's Bay. The visitors will first be taken round the dockyard; at 1.30 P.M. luncheon will be served on board the *Euphrates*; and at 8 P.M. the visitors will embark in H.M.S. *Orontes*, and proceed to Spithead and Stokes Bay. As the Pres-

cannot be accommodated on board the *Euphrates*, they will embark at 2 P.M. on board H.M.S. *Sprightly*. Whether the reporters will be able to give a good account of the operations is questionable, as the *Orontes* will be at a buoy inside the space guarded by the gun-boats, and no other vessel will be allowed inside this space except that of the Commander-in-Chief.

Mr. Melton Prior's original sketches of the Soudan War and Nile Expedition are now on view at the Pall Mall Gallery, and signally display the ability of this valiant and adventurous artist. Mr. Melton Prior has served as a "war special" in no fewer than thirteen distinct campaigns. Pictures and sketches such as these, drawn on the field of battle, amid the roar of cannon and shower of bullets, are unquestionably authentic. They are well worth visiting.

Mr. Augustus Harris again takes the lead in matters theatrical, for, in addition to bringing out a comic opera, *Frivoli*, on a scale of much splendour, and which abounds with songs topical, humorous, and sentimental, with a ballet the equal of which has rarely been put upon the stage, with his usual characteristic kindness he placed his theatre at Mr. Lionel Brough's disposal for his farewell benefit. Suffice it to say that this great comedian was supported by nearly every eminent member of his own profession, and an audience that crammed the house—an impressive tribute of gratitude and admiration for Mr. Brough, who has contributed for so many years to the enjoyment of the British public. Again, Mr. Harris gave the use of the theatre to Mr. J. H. Mapleson on the occasion of his complimentary benefit, when Madame Adelina Patti appeared for the first and only time this season in the favourite rôle of Rosina in Rossini's opera *Il Barbière*.

Berkeley's Patent Safety Match-Stand and Holders are, I learn, being used at many of the messes. It is a simple and useful invention. The match ignites by simply withdrawing the same from the stand.

A series of Fire Extinction Experiments took place at Woolwich, at the express desire of the Prince of Wales, showing the great value of the Imperial Fire Extinguisher in putting out incipient fires. The success of the various experiments was such that His Royal Highness has ordered them to be placed in Sandringham House and the stables. The great merit of them appears to be their being able to extinguish fires quicker than any other similar invention that has been brought forward. Experiments will shortly take place in London.

FURLOUGH.

Reviews.

TACTICAL STUDIES FROM THE FRANCO-GERMAN WAR. By Captain F. GLEADOWE STONE. London: Messrs. Kegan Paul, Trench, & Co.

More than once of late we have drawn attention to the dearth of good professional military works in this country. While the presses of the Continent send forth a copious stream of valuable books, officers in England seem to be quite content to write sketchy works of travel, or indifferent novels. Even the military literature of Italy, although born only a few years ago, is superior to our own; and we cannot name a single work on military matters published in this country during the last six months which a French or German officer would be tempted to translate into his own language. On this account we welcome Captain Stone's admirable tactical studies, with their excellent twenty-two sketches and maps, which will not only be read with instruction by officers in this country, but also provoke interest abroad. Captain Stone has visited the sights of the principal battles several times, and has very carefully studied the French, German, and English works dealing with the subject. The outcome is a solid volume, containing not only a clear and accurate account of those battles important from a historical point of view, but also carefully weighed comments rendering it peculiarly valuable to the student of military art. We wish we had more space to discuss more fully a work that should be added to every military library and studied by every officer. Failing this, we express our sincere gratification at the appearance of the book, and trust that it may stimulate other officers to help establish a current literature worthy of the fighting reputation of the army.

EASTERN LIFE AND SCENERY. By MRS WALKER. Messrs. Chapman and Hall.

The repudiation of the Batoum clause of the Berlin Treaty will direct English readers afresh to Turkey, and they will find in Mrs. Walker's charming volumes a graphic and interesting description

of life at Constantinople, and excursions in Asia Minor, Mytilene, Crete, and Roumania. During her thirty years' residence in the East Mrs. Walker had unusual, if not indeed unique, opportunities of studying harem life, and what she has to say on this subject is not only different from the impressions prevailing, but carries with it the weight of an authority not to be questioned. The accounts she gives of Turkish life bear out the views of most military politicians as to excellences of the Turkish character, and should dissipate some of the nonsense that has been written by fanatic Turkophobes who are invariably grossly ignorant of Turkey, and treat the Mussulman faith with a narrow-mindedness disgracing the Christianity they profess. Mrs. Walker has a facile pen, and discusses various Turkish topics in a graceful manner that never tires the reader. The chapter on slavery is very good.

THE UNIVERSAL REGISTER OF BRITISH AND FOREIGN SHIPPING.
Lloyd's.

The Committee of Lloyd's Register have displayed great public spirit and enterprise in compiling a register of all the shipping in the world, and adding thereto, in a portly yet convenient volume, a variety of information of value to naval men, such as, for instance, the list of dry docks of the world. Of special interest is the list of war-vessels, arranged in such a manner as to render easy a comparison of the naval power of different nations, together with lists of the signal letters assigned to war-vessels. As the only complete list of the war-ships of the world issued periodically in the English language, the Committee are quite right in believing that it will constitute a feature in the work of which they may be proud. We imagine there is hardly any writer on naval matters who will not find something in the Register of value to him.

THE R. T. S. LIBRARY. Religious Tract Society.

We have received from the Religious Tract Society a selection of little volumes belonging to their "R. T. S. Library" series, and including *Pilgrim Street*, by Hesba Stretton, *New Guinea*, by Chalmers, the *Life of Latimer*, by Demans, Fuller's *Wit and Wisdom*, Walton's *Olive's Story*, Butler's *Life of Oberlin*, and the Marquis of Lorne's *Canadian Life and Scenery*. Each volume contains nearly two hundred pages of clearly-printed matter, and some illustrations, and is bound in a strong and attractive manner—the price being only sixpence, or threepence unbound. Their cheapness and their handy size render them so well adapted for

soldiers' and seamen's libraries, that the army and navy ought to be the best customers of all for these admirable little books.

HIS MASTERPIECE. By EMILE ZOLA. London: Messrs. Vizetelly & Co.

This latest production of Zola's pen, *L'Œuvre*, or Claude Lantier's struggle for fame, is a realistic novel devoted to a description of the life of an artist at Paris. It opens in an unusually romantic manner, and closes with a drama in which Zola displays his peculiar powers to the best. The career of Lantier is full of interest, and the heroine, Christine, is a character of striking individuality. Now that such a widespread interest is being taken in Zola's novels, it is almost superfluous either to recommend this one or the reverse, but we may point out that it contains an admirable etching of the author by Bocourt, as a frontispiece, and that the preface reveals many interesting facts about Zola's personality.

CLEOPATRA. By HENRI GRÉVILLE. Messrs. Griffith, Farran, Okeden, & Welsh.

Henri Gréville's Russian novels have charmed the reading public abroad so long, that it is surprising they should have attracted such a small amount of attention in this country. Among them *Cleopatra* holds a high place, and the graceful original is rendered into such charming English that even if the novel were not so intensely interesting it would captivate the reader. It is very romantic, and, although the scene is laid in Russia, the story is free from the incubus of long descriptions of foreign sights, habits, and names, with which unskilful writers load their narratives, and which are interesting only to the initiated. Few will read it without sharing our hope that the publishers will expand this solitary work into a series.

FUEL. By D. KINNEAR CLARK. Messrs. Crosby, Lockwood, & Co.

Mr. C. W. Williams's well-known treatise on the combustion of coal and prevention of smoke has been revised and enlarged by Mr. D. Kinnear Clark, who claims to have added extensively on the "recent practice in the combustion and economy of fuel, coal, coke, wood, peat, petroleum, &c." We cannot say much for his claim. It seems to us that he has simply tacked on matter ten or fifteen years old to Williams's matter forty years old. Take peat, which has come into very extensive use in Germany and Russia

the last five years. Mr. Clark's data ends with 1875, quite an antediluvian period in the history of peat fuel. Petroleum is still more glaring. In his *Region of the Eternal Fire*, Mr. Charles Marvin refers to seventy different inventions for burning liquid fuel, and states that hundreds of steamers and locomotives burn it in Russia. Yet we find only a single chapter assigned to it, consisting of two half-pages of twenty-five lines altogether, and detailing some data of 1878, which is about as applicable to the modern practice of liquid fuel as the Book of Genesis. Messrs. Crosby Lockwood's books are invariably so well kept up to date that this curious mode of revision must be surely unknown to them.

RADICAL PIONEERS OF THE XVIII. CENTURY. By J. BOWLES DALY. London: Messrs. Sonnenschein & Co.

The constant discussion of the Radical tendencies of to-day necessitates a study of them by all who profess to entertain an opinion of their own on the subject, and Messrs. Sonnenschein, who are acquiring for themselves a distinctive reputation as publishers of political works, have done well in issuing Mr. Daly's elaborate account of Radicalism of the last century. The author is a graphic and entertaining writer; he has a thorough mastery of the times of which he writes, and even those who do not admire Wilkes, and Horne, and Paine will enjoy the perusal of work throwing a vivid light on the politics of the past century, and of the causes which led to the loss to England of her American colonies. It is a pity we have not more of such sound political works.

TO CORRESPONDENTS.

All MSS. intended for insertion must be directed to the Editors, *Army and Navy Magazine*, 13, Waterloo Place, London, S.W., and must contain name and address of the writer. Name and address on letters is insufficient.

It is requested that ruled paper be used, the pages numbered, fastened together, and a small margin left.

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Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.

THE ARMY AND NAVY MAGAZINE.

SEPTEMBER 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 310.)

3.—*The Concentration of the Armies.*

THE opening of the campaign is preceded by the *auf-marsch*; that is, the massing of forces on the frontier of the state to be attacked. The importance of correctly massing the troops increases in proportion to the numbers of the combatants.

The work of the Great General Staff upon the Franco-German War expresses itself on the point as follows: "Mistakes in the original massing of the armies can hardly be retrieved in the whole course of a campaign." Now at the first glance the correctness of this saying may appear doubtful. One would think that much more is dependent upon the issue of the first battles and engagements, which, in case of necessity, afford also the chance of quickly rectifying mistakes committed in the massing of the troops. The history of war does not lack instances of campaigns, begun with the most unfavourable evolutions, taking a complete turn for the better after a single successful battle. Let us only reflect on the fortune of Frederick the Great, in the first campaign of 1741. Field-Marshal Neipperg completely surprised the young King when entering Upper Silesia; he cut him off, by his advance upon Neisse, from all his communications, threatened his magazines and his reserve artillery, and compelled him to fight a battle with his head turned towards the enemy's country, so that he would have been irretrievably lost had he not been victorious. A more brilliant opening of the campaign for Austria, and a worse look-out for Prussia, it is scarcely possible-

to conceive of. But at Mollwitz the better training of the Prussian infantry was victorious, and the most abrupt change took place. At one stroke Frederick was master of the situation. It appears as if all strategical conditions had been completely without any influence whatever. We receive similar impressions, if we contemplate Czaslau and Hohenfriedberg, Leuthen, and their connection with the events preceding them.

Yet all these instances belong, without exception, to olden times. To the peculiarities of modern warfare belongs the intimate connection between movement and battle. That even to-day a campaign begun unfortunately may suddenly, by a single victory, take a favourable course, is certainly not impossible, but it is in the highest degree improbable. Considering the construction of the armies, and the very great extent over which they spread, as well as the independence of the individual parts, preliminary movements will always lead to collisions. These movements can only take an advantageous course if successful engagements be fought; as the march of the Germans into France was attended by the victories of Weissembourg, Wörth, and Spicheren. The better strategical position of one side proclaims at once definitely its tactical superiority. A faulty concentration entails that the forces are not at the spot where they are subsequently most required; and it will not, accordingly, be possible to bring those battles which will be first of all requisite for improving the general situation to a successful issue. Therein lies the disastrous effect of errors committed in concentration. Where the opposing forces are equal, such errors will in most cases effect the retreat of the one and the advance of the other. The best instance is shown by the Austrian campaign in the year 1805. A strong army of 100,000 men composed of the best regiments, and under a most experienced commander, the Archduke Charles, was sent to Italy, where, to judge by appearances, as in 1796, 1797, 1799 and 1800, the most important decisions were to be expected. Only 70,000 men under Archduke Ferdinand and Mack were upon the theatre of war in Germany, when Napoleon arrived with superior numbers from Boulogne by forced marches. The great catastrophe of Ulm was the immediate consequence. It could not be counterbalanced by the victory gained by the Austrians at Caldiero in Italy. Though the mistake was soon perceived, and Archduke Charles recalled to Germany, yet this could not alter the issue of the war one tittle. The battle of Austerlitz ended it before the Archduke could strike a blow for Austria.

— First massing of the French armies in 1870, in two distinct

groups before Metz and in Alsace, was done with a view to taking a rapid offensive into Germany, for which they neither possessed the means nor even seriously entertained. The wide separation of the two armies, after the first disasters had rendered it impossible for them to unite, compelled a long retreat. MacMahon's retreat to Chalons, and Bazaine's isolation at Metz, which soon followed, were the result. The last led to the march upon Sedan and the catastrophe of the 1st of September. It is easy to perceive the connection of the seven defeats, which were inflicted upon France in the first period of the great war, with the original dispositions affecting the massing of the troops.

The concentration of the armies falls in a time when politics have just decided to have recourse to the sword; hence not only military but also political considerations must be thought of. Next considerations of commissariat, housing, geographical conditions, lines of communication and network of roads demand attention.

No state will immediately at the outset of the war be willing to give up and surrender a province that is threatened, even when military reasons would make this appear to be desirable. The doctrine of war has certainly laid it down that such sacrifices must be made without hesitation when higher interests require it. When the conduct of war was exclusively dependent upon the sovereign will of an absolute monarch, this may have been correct. In our days the courage, strength, and confidence of the whole nation, as well as its national credit, play too great a part to allow of this being adhered to. Let us only present to our minds the impression it would make, if the war of Germany against France began with the surrender of the left bank of the Rhine, or a campaign against Russia were to begin with the abandonment of Prussia, as far as the Vistula.

The motives which would perhaps justify these measures in the eyes of soldiers would be concealed from the view of the masses. They would always get into the most lively state of uneasiness if considerable tracts of the country were abandoned by their own troops, and surrendered to the foe, without apparent necessity. In the voluntary abandonment of a province is also abandoned the use of its resources and energies. If the enemy can occupy it, we must even, if the war has run a favourable course for us, recover it again before the conclusion of peace.

After the ill-starred campaign of 1806, learned critics asserted that the Prussian army ought to have retired upon the Oder and united with the Russians. Even if Saxony had defected and many troops had deserted throughout the long march of retreat, yet,

the same, numbers would have told in its favour. That is quite correct. But even if Napoleon's attack upon the line of the Oder had not succeeded, yet, all the same, the Emperor was meanwhile master of the best Prussian provinces, and the Prussian army would have been obliged to win back its own land by victories before arriving at the point where it was before the outbreak of war. The attempt to maintain it from the first deserves, accordingly, no blame at all. To war, also, the Latin proverb, "*Beati possidentes*," is applicable.

Accordingly, Frederick the Great, in the invasion of 1757, occupied East Prussia as long as he possibly could. During his various campaigns in Lusatia and in Bohemia, he was always bent upon securing upper Silesia. Similar was the case in 1801, when the Prussian army concentrated in Thuringia and Franconia, but an army corps was left at Glatz and Neisse. In 1866 the Prussian army concentrated there, in spite of the fact that the march into Bohemia in the direction of Gitschin had already been decided upon.

Protection for the threatened provinces is one of the demands which must be fulfilled at the first concentration of the armies.

It must, however, not be conceived of as being an absolute occupation of the frontier. Very frequently it will indirectly result from the proximity of a great army, which makes the advance into the denuded tracts of country so dangerous to the enemy that he abandons the idea. If it has been determined to advance to the attack, the effect of this movement will very soon be to secure one's own territory. The enemy can also, as a rule, only despatch inconsiderable forces to distant provinces. Therefore, reserve and garrison-troops, or even general levies of citizens, may be entrusted with the duty of guarding them. For instance, in the year 1795, when war with Russia threatened to break out, the minister Von Schroetter was prepared to defend watery, hilly, and woody East Prussia with a "Landsturm" of fifty to sixty thousand men, supported by a few strongholds.

Those portions of the active army, whose first mission it is, whilst the troops are concentrating, to protect the frontier, may only in quite exceptional cases be withdrawn from co-operation in the great operations. If they at the same time arrest the progress of the enemy's army, as the corps of the Field Marshal Lehwald did the Russians, or avert great masses of the enemy's troops from the critical spot, as Massena did in Italy in 1805, they may be left detached from their main force. In such a case they pay; but in other cases, they must always be so arranged as

for it to be possible to bring them up to the decisive point in time. This was the case with Schwerin's division in 1757, when King Frederick invaded Bohemia. It was repeated in 1866, with the army of our Crown Prince, when the Prussian attack began.

It is also essential to secure the integrity of one's own territory, but it must be adroitly brought to harmonise with the co-operation of all forces for the dealing of the great blows.

But the transition from a state of peace to one of war will not always be as sudden as it was in 1870. In spite of all possible haste, the concentration takes a considerable number of days. The massing of great bodies of men and horses always entails manifold difficulties. Not only good quarters must be provided, but the question of commissariat demands even yet more attention. Even though the troops do bring some provisions from their home with them, yet it will not be possible quite to dispense with the resources of the district wherein the troops are being concentrated. It is in any case an invaluable advantage, if they can for some time find good quarters. Besides, steps are immediately taken to form magazines. Purchases of supplies on a great scale must be possible either on the spot or in the neighbourhood. The railways principally serve for the transport of troops. Rivers which lead from important centres into the district where the army assembles bring the greatest relief. That the massing of troops can be more easily effected in a rich country, covered with a network of railways and roads and rivers, than in a poor and barren district, where quite special arrangements have occasionally to be made, is quite evident. *The natural and civilised conditions of the territory, where the massing of the troops takes place, must also be carefully considered.* Moreover, as a matter of course, a great number of combatants cannot be concentrated where rivers without fords, or hills, or trackless mountains, delay their later movements; but this consideration is for the most part met by the fact that no great lines of traffic lead into such districts, and thus they are not taken into account in dealing with the massing of considerable bodies of troops.

What effect politics exercise upon war, was seen in the year 1877. Had Russia been able to reckon upon Austria, as upon Roumania, it would have been in a position to have allowed the army of the south to have massed on the Danube, instead of on the Pruth. No great fears were entertained of an offensive on the part of the Turks across the river, to disturb that concentration. The consideration to be paid to unreliable neighbours, to faithful allies whom danger threatens, to wavering Powers whom we wish

to carry away by the prompt offer of a powerful protection, and considerations to be paid to neutral territory, respect for which is at the same time enjoined by cleverness, will always make themselves felt in all concentrations.

But, before all things, the position of the great lines of communication leading to the district chosen for the massing of the troops, especially that of the railways, is of vital importance.

It is easy to conceive that that belligerent which is first ready with his concentration is much in advance of the other; he can begin with evolutions, and force his will upon his opponent. Where the forces are to a certain extent equal, he will also have the first successful battles on his side, gain in moral value, arouse confidence, and gain it from others. He will, in a single word, lay down the law of action, instead of obeying it. He has in the preliminary operations the ascendancy on his side; and it is, as a rule, only imperative that he understands how to use it with energy in order to assert it permanently. The rivalry of great armies of these modern days in mobilising their forces on the frontier is thus explained. This rivalry now reckons by hours, and no longer by days. It is, therefore, of the highest importance for the strategical concentration, to use as many railways as possible; yes, if possible, all that lead in the direction in which the war is to be undertaken. The plan for the concentration will begin with the consideration of this condition. The question how the troops are to be brought up to the frontier on which they are wanted, is naturally the first.

If the extraordinary importance of the rapid completion of the *Auf-marsch* is recognised, its connection with the *mobilisation* of the army is at the same time at once apparent. No regiment is capable of marching immediately upon the enemy from its headquarters. First of all, the soldiers that have been dismissed must be summoned to the colours, each one to his own particular sphere of action. Hundreds, thousands—perhaps, millions—of men will be suddenly torn from their firesides and set hastily in movement; and this latter must be most exactly prepared beforehand if a serious confusion is not to arise. The most difficult is not the mobilisation of the line regiments; here, on the contrary, everything works easily in comparison. But numerous and special departments must be newly formed. The first reserve, the garrison and the reinforcements, *ober-kommandos*, general-gouvernements and gouvernements, the inspections of the lines of communication, and the *kommandanturen*, most of them with special staffs, composed of various branches, are only formed on the day of mobilisation.

All the columns and trains must be filled and equipped with horses; and the parks of transport newly organised. *Intendanturen*; the commissariat, field-bakeries, and post-offices, the telegraph staff; the paymaster's, the legal and sanitary, and the chaplain's departments, must also be formed.

Commissions of all kinds are formed. Men have to be clothed and armed, officers and officials furnished with horses, depôts formed, supplies collected and brought together. Fortresses threatened by the enemy must be put into a state of defence, and equipped with military garrisons, officials, and organisations of all kinds. The business of peace requires to be brought to a conclusion, or to be assigned to representative officers; the archives and registration departments must be made secure for the period the war shall last. The bureaux for the active army must be arranged and properly fitted out. Men, horses, and *matériel* of war must be forwarded upon the railway to the place where they are required. The transports to the frontier soon afterwards begin. All this must take place in the course of a few days. In the year 1870 mobilisation was ordered on the night of the 16th of July; and on the 4th August the frontier had been passed and the first victory won. Now-a-days we wish to be quicker still. A work must be accomplished that not only requires long and careful preparation in time of peace, but which also in the moment of execution, sets the governmental administrative machine in feverish activity and makes it put forth all its strength. Yes, this feverish energy seizes upon the whole of the nation. All private matters are affected to the greatest extent. The days of mobilisation are days of great excitement and exertion for everyone. "The mobilisation of an army is, under our modern conditions, a safe index for testing the value of the whole political organisation and the spirit of the people," Colonel Blume rightly says in his book upon *Strategy* (p. 66; Berlin, 1866).

The plans of the field-marshal are mere castles in the air, without good preparation for the rapid placing of armies upon a war-footing. The enthusiasm of a whole nation cannot replace a deficiency in this respect. France in 1870 comes warningly before us. At that time the superiority of Germany, in point of numbers, was known in Paris; and this superiority our enemies intended to neutralise by boldness and rapidity. The idea was a good one. The whole people, carried away by wild, martial ardour, demanded energetic measures—a material aid to an energetic régime. But for the purposes of putting them into execution it was needful, before all else, that the Germans should be outdone in the

rapidity with which the armies were massed; instead of which, however, confusion and stagnation made themselves felt from the first. The boldest plans would have been impotent. The machine refused to work.

Some of the telegraphic cries of anguish which flowed into the French Ministry of War, upon all the wires, from helpless subordinates, are well known: "900 reserve troops here, I do not know what to do with them." "In order to make elbow room I shall send them all to Algiers, upon the transport ships that are here in the harbour"; the territorial commandant at Marseilles reported.

"How far have you got on with the formation of your divisions? The Emperor orders you to hasten this formation in order to join Marshal Macmahon as quickly as possible." With these words the major-general of the army, who had been for some time Minister of War, addressed himself to one of the commanders of an army corps. "Send me money that I may provision my troops; there is nothing in the public treasury, and in those of the corps nothing either," a general was heard to say.

"In Metz there is neither coffee nor sugar, no rice, no salt, only a little bacon and biscuit; send me at least a million rations to Thionville." The quartermaster-general telegraphed to Paris: "The quartermaster-general of the third army corps reports at the moment that his troops should start, 'I have neither nurses nor ambulance waggon, nor officers, nor field bakeries, nor train.'"

And so it went on. Haste, mistakes, deficiency, disorder reigned supreme; whilst the mobilisation of the German armies was accomplished with an almost noiseless calmness. These latter broke into the country over the frontier before, on the French side, the first step had been taken towards meeting the demand for an *offensive* which should put everything right. The idea of crossing the Rhine and separating north and south Germany from each other belonged to the past.

That will always be the fate of projects of war when preparations have not been made in time of peace to harmonise with them, and when the *wishing* and the *being able* are not in concert with each other.

Yet danger does not *alone* lie in neglect. Over-great demands, such as the rivalry of the different great states in hastening their mobilisation and massing their forces easily entails, are quite as dangerous. The best of forces fail to do their duty when confronted with impossible tasks. The feeling that one is opposed to

such, deprives men of clearness and composure. He who at the time of mobilisation has not a great freshness, both of mind and body, will not be capable of responding to those demands. A leading man must accordingly avoid all over-exertion quite as much as inactivity. Nothing, in critical moments, has a worse effect than nervous irritation. Our simple forefathers knew nothing of this. The disquietude of our modern life has made it a fashionable disease. Valuable as all time gained in mobilisation is, it must yet not be bought at the expense of order.

As the massing of the troops is intimately connected in one direction with mobilisation, so it is also connected in the other with the intentions which are entertained with respect to the *opening operations*. A concentrating of armies, which is a practical measure for an attack about to be made, may be very unfavourable for the defence; as was experienced by France in August 1870. All considerations are seldom united at the first outset. Here, too, the attitude we pre-suppose the enemy to adopt is also naturally of influence. To calculate it aright is the duty of the scheme of operations.

The concentration of the armies of two Powers of the first order presents us to-day with the picture of the most stupendous emigration of peoples. Each one brings with it a million of men, and 800,000 horses, as though it were a small realm that had become set in motion, and was wandering to the frontier in order to pour its whole population over a confined district. Were it not for our modern means of intercourse, it were impossible to move and provide for such masses. It is only possible because States like France and Germany have so much railway material at their disposal that they can entrain their whole active army *simultaneously*.

The trouble and care necessary in order to arrange this martial migration of peoples, and the moving forwards and backwards of numerous railway trains, needs no especial notice. The preliminary labours for this special branch employ no insignificant number of officers, officials and engineers in time of peace.

Where numerous considerations prevail, it is difficult to find the correct solution. But on that account a strategical concentration is also the sole military operation which the supreme commander of the armies has still completely in his power. The conditions and the difficulties are manifold and difficult, but yet they can be previously calculated, as can most events in war. For the success of this first act, in which uncertainty, that controls everything else, plays the smallest part, the general staff to which is entrusted

the duty of working it out must be made especially responsible. Only afterwards do the sovereign powers of fate begin their play, and withdraw the course of events sometimes, also, from the keenest human calculation and foresight.

Twice lately has this problem been successfully solved. The massing of the Prussian army in the year 1866 belongs to the best of its kind. After it was accomplished, and had succeeded, it appeared perfectly natural, just as if it could not have been possible for it to have gone otherwise; but let us present to our minds the original state of things, and we shall be forced to recognise that it was an extraordinary feat. Three inimical groups of states threatened Prussia on the west, south-west, and south—between them its own territory split up and divided by the most unfavourable frontiers possible; a portion of its forces sent to Schleswig. Austria was five weeks beforehand in its preparations for war, when Prussia mobilised its army, between the 5th and 12th of May, yet the latter was ready with its armies on the Silesian and Bohemian frontier, and gained fourteen days start of Austria. That could only have been attained by the bold resolve to direct the whole of the available forces immediately against the most important enemy, viz. Austria, further, by adroitly employing all five railway lines which converged upon the theatre of war; and, last of all, by massing in three independent groups. But it was just this last measure that was at this time found fault with; and yet it was the most important of all. It was that which rendered it possible to make up the lost time; for, to three points of concentration more communications run than to one only. It brought it to pass that the provinces most directly threatened, the Mark and Silesia, were simultaneously protected, that the army could be provisioned without difficulty, and that it had at its disposal for its advance at once a large number of convenient roads. But, certainly, this advance was bound to follow. To stand still with divided armies upon a line sixty miles in length, lying between the Saale and the Neisse, divided by the Elbe and the numerous tributaries of the Oder, in order, in this position, to wait for the attack of the enemy, would have been ruin. Only the union of those armies after advancing into the enemy's country could neutralise the dangers of the position. But this also had from the first been calculated out. The bold step was at once enjoined by cleverness and prudence. The good result that was obtained does not appear mere accidental success, but the result of a practical plan.

The short-sighted reproach that was launched by a critical voice—against that concentration and the first operations with these

words,* "The Prussian military operations did not in respect of strategical combinations pass beyond mediocrity," has been replied to aptly by a pen that is most of all qualified to write it: "Amid the perplexing elements of war, it will be very seldom that one will be able to attain the ideal, but even what is mediocre may, as the result has shown, attain its object. The union of the Prussian armies at the right moment has, at all events, never been claimed by the Prussian General Staff as an especially intellectual idea or a very abstruse combination. It was a remedy for an unfavourable yet original situation, enjoined by necessity, planned with understanding, and carried into execution with energy."†

In the year 1870, what was most instructive in the massing of the German army was, on the one hand, the justifiable boldness with which, in spite of the sudden burst on the part of France, it was laid across the Rhine, and, on the other hand, the confidence with which the direct protection of South Germany on the Upper Rhine was abandoned, in order to permit of all forces being united together in the Palatinate. Nothing was more correct than this; for the great German armies, which appeared on the Saar, threatened France and Paris so immediately, that the enemy could no longer think of any far-reaching operations.

Definite rules cannot be laid down for the concentration of troops any more than for any other matters of war. Only the conditions upon which the original massing of the armies is dependent must be explained in general terms. In every instance they will work partially or collectively, but yet be always different in their effects. To conceive of them aright, under the circumstances given in the concrete case, is a matter for military shrewdness. But a good school is productive of good results in this task. If it be only in order to be assured of correct measures being adopted at the commencement of a campaign, that the theory of a great war is studied, yet in this one single respect it is of sufficient value for us.

4.—The Plan of Operations.

"*Je n'ai jamais eu un plan d'opération,*" is a saying of Napoleon. But, in spite of this, belief in a system of war has been preserved down to our days. Great soldiers, who are honoured by a grateful country with statues, have a drawn sword placed in their

* In the February number of the year 1866 of the Austrian military periodical (*Streifleur*).

† No 18 of the *Militär Wochenblatt* of 1867. Field Marshal Moltke is said to be the author of the essay in question.

hands when they have gained glory as leaders of troops. Those who have been pre-eminently regarded as "thinkers," hold a scroll in theirs. This scroll signifies their plan of operations, the symbol of their merits. It is said of them that they calculated beforehand and foretold exactly, the course events would take, and when and how they would defeat the enemy. Of Frederick the Great history narrated erroneously, for a whole century, that on the 4th of May exactly he intended to be before Prague, and to defeat the Austrians on the 6th. How widely spread was not the assumption that the battles of Königsgrätz, Thionville, Metz, and Sedan were all enumerated in the plans of the German generals.

But now we are told by the work of the General Staff of 1870: "Only an unprofessional man thinks that he can, in the course of a campaign, perceive a previously determined execution of a plan, laid down with all its details and adhered to until the last. True it is that the general commanding will ever keep great ends before his eyes, unperplexed by the vicissitudes of events; but the ways upon which he hopes to attain these ends *can never be with certainty laid down long beforehand.*"

That approaches Napoleon's saying. Yes, we may assume that, strictly speaking, he meant just what has been here said. So far as the first steps may with any degree of clearness be perceived, he here also definitely fixed his eye upon them and thoroughly prepared the way for their succeeding. He was, in spite of all his boldness, a very cautious general, and his adverse judgment was only based upon the military war plans of the old military scientists, who, in spite of their specious acuteness, were nothing but incapable *dilettantes*.

A test of this is the plan which Charles William Ferdinand of Brunswick, on the 3rd of November 1805, laid before the Council of Monarchs at Potsdam. Napoleon had taken Mack prisoner at Ulm, and was about to advance into the heart of defenceless Austria, yet the Duke proved that the Emperor could not march by the Tyrol so long as the Austrians were there, and that he would thus be soon brought to a stop. Then the Prussians from the north and the Austrians from the south would fall upon his rear, and the Russians take him by the throat, as soon as he faced quickly round; thus much was assumed to be certain. On the Neckar, the Duke would cut off all his communications with his country, so that he would be only able to save himself by crossing the Rhine, or would be obliged to take refuge in Switzerland. In the winter, the Allies, after all these ~~successful~~ events, would encamp victoriously on the right bank of

the Rhine from the Wesel to the Lake of Constance, in order to keep Napoleon secure on the other side. But, more than this, right through Holland, and across Italy, this Prussian *generalissimo* intended to have Napoleon attacked by the Allies, so that from the north down to the Mediterranean, a great net was to be drawn round the lion and he taken prisoner in it. But how, supposing he freed himself by a battle?

The Duke easily helped himself over this objection. Napoleon was bound to lose the battle. Of course, if we may calculate in this way, plans of a campaign can be drawn from the beginning to the end. Instead of the retreat of the French, however, the march on Vienna took place; instead of their defeat, the victory of Austerlitz; and the whole plan showed itself to be what it really was, a mere impotent cobweb of the brain.

With the commencement of the operations after the massing of the troops, that prevailing element in war, uncertainty, shows itself. In war in reality, things always turn out differently to what was originally expected. Nothing is more natural than this. "The independent will of the enemy now opposes one's own will." Whoever would calculate the course of events beforehand, must draw results from given and ungiven quantities. The result must be quite uncertain. A little certainty is inspired into the calculation as soon as it has been decided which of the two parties is the stronger, and the stronger knows that he is able to carry out his own intentions wherever the enemy crosses them. He has firmer ground for his combinations than his opponent.

Each of the belligerents will endeavour to create such a situation for himself, and so it comes to pass that in war simply a great decisive battle must be sought by both parties. At all events, that party aims at it that feels in himself definite resolve and great confidence. *The first object upon which the movements of the armies are to be directed is, accordingly, the enemy's main army.*

Wherever this rule is deviated from, reaction is the almost invariable result. The last instance of this is afforded by the summer campaign of 1877. With great agility the Russians, after crossing the Danube, reached the passes of the Balkans, and pressed forward through this protecting range of hills. It appeared to them that the road to Constantinople was open to them, and in two weeks all would be over that could only be expected in the course of months. But the confirmation of this success was confronted by a very great difficulty. The Turkish armies on the north side of the Balkans were as yet undefeated, and the fate of the campaign was dependent upon the work that had to be accomplished there, and not

upon the mere gaining of a few passes. Scarcely did the armies of the Osmons give the first signs of life and appear on the Lom and at Plevna, in the flank of the Russian advance, when all that had been gained was obliged to be given up, and the issue of a battle, which had been hitherto avoided, was obliged to be staked. Until this decision took place, the whole operations stood still.

In the battle, the victor subordinates the will of the enemy to his own, but he does not entirely suppress it. Decisions like that of Sedan, in which whole armies disappear from the theatre of war at one blow, are very rare. The will of the defeated still retains a certain influence. MacMahon's influence, in spite of his defeat at Wörth and the deficient character of his army that had been reinforced at Châlons, was yet sufficient to divert the German main army from its march upon Paris to the northern frontier.

Even the battle's successful issue does not fully secure the execution of plans. Even after this, it is dependent upon the combinations of the moment, and upon the complications which result from effect and counter effect. These lead to fresh actions, and each battle changes the situation as completely as a twist does the coloured glass of a kaleidoscope. The general is thus compelled every day, and often within a period of a few hours, to attach his combinations to new situations. The history of war only seldom gives a complete picture of it. Considering the multitude of events it deals with, it, as a rule, only brings into prominence what in later times commands general interest, and skips what is only of momentary importance, only then to disappear as illusion. After a war one ought not only to write the history of what has taken place, but also the history of what was intended; then would the narrative be an interesting one. The confusion of influence is much greater than people imagine. A day about which we only read a few lines in a book may, in reality, have been fraught with great historical interest.

Many things must be looked to. Here we must push, and there we must impede, in order that the course towards the object that is glimmering in the distance be not lost. New plans are for ever attached to new situations. It depends upon the perseverance and the acuteness of the general to what extent a great leading thought shall, like a red thread, go through all. Where shall we find this idea? It results from the general situation of war and politics. In considering it we shall, as a rule, have come to a definite conclusion as to what must be attained in order to deprive the opponent of an inclination for continuing the struggle.

A weak opponent will say to himself that he can tire out the stronger by continuing a resistance to a certain point, or by gaining allies. The stronger forms an idea as to how far he must advance after crushing the enemy's forces, whether he must occupy the enemy's capital, or its central provinces, in order to attain a successful conclusion of peace, which is the end and object of all war.

According to this, one can present to himself a picture in great outline of that course of events which should always be aimed at amid the eternally changing vicissitudes of events. It may, perhaps, be laid down as a principle, that resistance must be continued behind this and that entrenchment, until reinforcements arrive, or until the armies of a friendly power come up. If one has the strength, one will determine to push the opponent, as soon as ever one has succeeded in defeating him, into a direction disadvantageous to him, into portions of the country one has previously chosen for the purpose; but more than such general hints and points of view cannot be given even by the best strategist. Only the most immediate steps can be determined in detail. *No plan of operation can, with any degree of safety, extend beyond the first collision with the enemy's main army.*

Unfortunately the strategic plans of the general only seldom transpire in their entirety. As a rule, the admixture of political considerations makes them ill-suited for publication. Of all the more value are the individual instances, where they have been printed, such as the Memoir of the Prussian General Staff, which afterwards formed the basis for the first movements of the German armies in the great war. We find therein, after a general survey of the position of Germany and France, and a comparison of the forces, the advance of the three armies described almost exactly as it took place. There are even therein contained all the details that are regulated and determined by the authority of the commander-in-chief. Further, the immediate object was declared to be to find and attack the French main army. Under all circumstances it might be presumed to be close to the front. The directions the advance should take, as they were as a fact taken in the memorable days of August, were accordingly easy to arrange. Furthermore, as is told us, the sole leading idea was to drive the enemy's armies from their connection with Paris towards the North. But more than that this was desirable could not with any certainty be determined beforehand.

This idea that was only signified in general terms was to a certain extent sure of realisation. It could never have been a prophetic calculation of separate and individual movements. In

the advance of two German army corps upon the Moselle, southwards from Metz, towards which latter place Bazaine had withdrawn, in the movement of the third army upon Châlons, in the march upon Sedan—everywhere the endeavour can be perceived to drive back the enemy into the smaller northern part of France, and to cut him off at once from the metropolis and the resources of the south. But vaticination could never have dared prophecy beforehand that Bazaine would decide to remain about Metz, and that MacMahon would then be forced to undertake the disastrous march in order to save him. Such decisions are dependent upon how the doubts in the mind of the general turn out at the critical moment. A mere accident, information not important in itself, an encouraging or discouraging word, may give calculations and decisions a different direction.

Only strategic plans of such wise limitation as those referred to have prospects of realisation. The term "design of operation" is more in harmony with the nature of the case than "plan of operation" or "war plan."

The whole province which the "design of operation" covers, is a narrow one. It embraces in these days not more than the first collection of the forces for the advance against the enemy's main force, or for repelling its attack. In the future it will be still further restricted, when the armies become more numerous, and the systematic frontier defences more frequent. From the first moment the armies confront one another closely, and the scope for movements is very small. A preliminary operation, formerly unknown, will in the future, under similar circumstances, be to push through—that is, break through—the frontier line. This must be attempted by the assailant in the place where he knows that the enemy's main force is not in immediate proximity; for its presence on the spot would materially impede the clearing away of the defences. In this case, accordingly, the enemy's main body will be sought for by a roundabout way. Flank movements on both sides of the original line of advance, and the rapid massing of troops on the point where on the one side a breaking through is expected, or on the other feared, will be the prelude to the ensuing bloody battles. Upon these, according as the issue of them is, further steps will follow.

More detailed statements as to the contents of a design of operation it is hard to make. The operations will vary according to the situation of either belligerent at the time hostilities commence. Only the history of its origin can be sketched, and it will as a rule be fairly uniform.

Designs of operations and advance must be worked out in common. First of all, the general political situation must be sketched in its main features. Therewith is, as a rule, combined an estimate of the forces at the disposal of the parties. The result of these introductory considerations will be the determination against which power the main forces shall operate, so as to bring about a decision, which is also of political effect, and which must be arrested or only observed. The simple case, that only one power must be considered is rare. For the most part allies, uncertain neighbours, or secret enemies demand attention besides the open ones. Germany, especially, owing to the fact that it is surrounded by great Powers, must ever look on all sides. For instance, we can complete the actual design of operation for 1868 by the supposition that Austria had demanded attention as being the ally of France. At that time two years had only elapsed since the Austro-Prussian War. Such a supposition, accordingly, does not lack the necessary possibility, and it makes the instance more instructive. At that time there would have to be taken into consideration whether the main army of the North German League should be employed against France or against Austria.

On the French frontier, the Rhine, with its fortifications, formed a very strong line of defence, which might have been held for a long time even against superior numbers. On the Austrian frontier such a line of defence was wanting. But, in defending itself with weak forces against France, South Germany would have remained without protection. The French could have evaded the North-German Rhine front by marching *viâ* Worms, Mannheim, or Speyer, and have advanced on Berlin upon the great road through Franconia, which Napoleon used in 1806. In the meanwhile, the offensive of our main forces against Austria would have come to a standstill, perhaps before Olmütz, or on the Danube. It would, also, have been possible that the Austrian armies would have immediately retired thither, in order to give the French time for successes. Besides, at that time, they required a number of weeks in order to be ready for war. On the other side, it would have been said that the French, if the German troops were once on their soil, would not have waited for Austria. Their national pride would not have suffered that. Here, accordingly, in any case, a great decision could have been rapidly effected, the effect of which could alter the whole situation, and possibly force Austria to sheath the sword she had only half drawn. Moreover, it was possible that she would have been stopped by considerations of Russia. And, therefore, in such a case, it would have been determined, in

the first instance, to put only a weak army in the field against Austria, and to throw the main force upon France, in order to seek here as quickly as possible a great battle with superior numbers.

In like manner, we should have had to discern, in the case of other political groups, whither the main forces and whither the subordinate ones should be sent, or whether, as in 1870, it is advisable to operate with the whole force against a single enemy.

After the design has arrived at this point, the determination of the advance is next fixed upon. As this must, if possible, be completed earlier, but, at any rate, simultaneously with the enemy, it will be absolutely necessary to distribute the troops among all the railroads leading to the frontier, in such a manner that every indirect course and all loss of time shall be avoided. The terminus stations of these lines show, as nearly as possible, the line of advance. Next come the numerous considerations of a political and geographical nature, already explained, and all the conditions of civilisation must also be regarded in their total effect. We must take into consideration whether the general circumstances compel us to await the attack of the enemy, or whether, which is always desirable, we should take the initiative. As in the latter alternative the object in view is the enemy's main force, it follows that its probable advance will be of the utmost influence upon our own. Of course, it is not known. But if in spirit we transport ourselves to the enemy's side, and there enter into the same investigations as we have already made in our own case, if we weigh carefully the position of the railroads in the enemy's country, the necessity of protecting the threatened provinces, and, later, the metropolis and the frontier defences, if such exist, we shall be able to guess with tolerable certainty the advance which the enemy must take. At the worst, there is a very limited number of possibilities.

If we have made up our minds as to the enemy's advance, in the *design of operation* (supposing there be any scope for it at all) we shall be able to determine in what district of the frontier our own troops ought to be massed. Thither the railway transports or the last sections will next be directed, branch and side lines being made use of. Finally, the troops will be pushed into position by foot marches. In this, each division must be allowed room enough to find comfortable quarters. It must also be taken into consideration that, in case defence be thought of, a combination of troops for a battle must be possible; if an attack is to be made, that each army corps must have at least one good road in front, leading from its quarters straight to the enemy. Under all circumstances the ~~main~~ divisions must be placed in the van, else, in order to

allow them to begin their reconnoitring activity, they would have to be brought up through the other troops. This would be productive of confusion, and deprive them, besides, so long as they are passing, of the means of finding quarters, all the villages and towns being already occupied. As a rule, they will be sent ahead upon the railroads, or, at all events, a part of them, by which arrangement they will arrive at the head.

The position of the railway termini, and the roads upon which the last short marches are made into the gathering-ground, determine, as a rule, the natural grouping of the collective forces in armies. That was the case in 1870. At all events, merely in order to make one army stronger and another weaker, and to add definite corps to this and others to that, no unnecessary and dilatory movements will be undertaken.

The measures hitherto laid down form the bases for the thorough utilisation of the railroads for the purpose of collecting the troops. But from them there will always result a number of alterations and corrections for the design of operation, which will be subsequently added. In case the massing of the troops has been precisely laid down, the design may be continued further by exactly determining the steps to be taken after the advance has been completed. Then it will be possible to calculate how many troops will be available each day on the frontier. By computation the same can be calculated in the case of the enemy, and it can be calculated what he is able to do and what measures must be adopted to meet him. Again, it will appear in what moment we have become sufficiently strong to consider ourselves secure against surprise, and in what we are in possession of the requisite numbers so as to be able to advance and to open the operations. Finally, there may be added, in what direction we think of opening them.

Special considerations are requisite if naval and coast matters are likely to be of influence; that is, if we have to reckon with maritime operations, or with the possibility of the enemy landing. In like manner, in drawing up the plans of operation it is necessary to decide where—according to general ideas—the enemy's frontier-line must be broken through. Heavy artillery will be required for this purpose, and bringing it up requires special preparations. If it be by a mistake sent to one wing whilst the advance is to be made with the other, it will not be possible to transport it in time.* Here, accordingly, precautions are necessary. For the same

* Colonel Blume is of opinion that even where the surrender by bombardment of a town encompassed by fortifications may be expected, success may only very rarely be expected from the field-artillery alone.

reasons it will have to be previously arranged whether a great fortress of the enemy shall be besieged, and, if so, which.

No State can simultaneously attack several modern fortresses of the first order, so great is the apparatus necessary for the purpose; and if this be once brought up to any one place in the theatre of war, it can only with the greatest difficulty be taken to another.*

The design of operation in its full extent will not, usually, be submitted in writing to the *ober-kommandos* of the different armies: it is, however, of importance that the commander-in-chief of an army, or its chief of the general staff, should be informed in general terms of its contents, in order that they shall not grope about in uncertainty as to the preliminary steps to be taken, which are frequently of decisive influence upon the whole war. Even in 1870, as the work of the General Staff informs us, at the first advance on and across the Saar, there were no lack of misunderstandings.

Perhaps it would be as well if those who, in times of peace, have been chosen chiefs of the general staffs of the respective armies, were employed, if not in determining, yet in framing the design of operation.

Herefrom sprang the first *Direktiven* of the great head-quarters, and their comprehension will be materially facilitated by a knowledge of their basis.

It is not difficult to perceive that the design of operation cannot be the work of a day; that it arises by degrees, or, in case it has been first sketched from a single mould, that it must gradually be corrected and completed. Even if we proceed with more certainty than in all later decisions in war, yet even here we are very dependent. Mobilisation and the railway-transport are so intimately combined with the strategic plan, that this latter cannot, as in old times, freely decide as to the directions the troops are to take. By this means on the one side the risk is diminished of falling into unsubstantial dreams of fancy; on the other, the work will be infinitely more difficult. Later designs of operation, such as arise in the course of the war, will only become freer when, after decisive events, new phases are entered upon. The advance has been effected, the armies are in motion, and only considerations of general validity have to be observed, such as were also observed in former times.

* The design of operation must be supplemented by the addition of the railway dispositions, a sketch of the composition of the mobilised armies, a list of the officers in command, and information multiplied in a sufficient number of copies as to the enemy.

One principle we must notice.

Even though the design of operation, as a rule, takes into consideration several possibilities, yet it must never look for measures which suit all cases; for these are for the most part of such a nature that they are in no single case productive of especial weight.

On the 25th September 1806 the Prussian armies stood in three groups at Mühlhausen, Naumburg, and Freiberg in Saxony, whilst the French in South Germany were diffusely scattered. Now the Duke of Brunswick devised the plan of attacking the French army by surprise and defeating it before it had time to collect. But the native hue of resolution was too soon sicklied o'er with the pale cast of thought. Diplomacy considered a peaceable compromise still possible; hostilities were accordingly not to begin before a certain day. Meanwhile Napoleon had time to anticipate him, to encompass the advancing columns right or left, to throw them towards Bohemia, or separate them from the Elbe. It was accordingly considered practical to place the army in such a position that it could at the right time fall back upon the defensive. More than this, they wished, at the same time, to take care that in it they could turn as easily to the right as to the left, in case the enemy appeared on this side or on that. And so it came to pass that it was determined to collect the forces first of all on the north side of the Thuringian forest. By this means the wished-for delay in beginning hostilities took place. The troops would be able to stop before reaching the mountains, in case Napoleon played the "prevenir," and they could, from Erfurt and Gotha, easily march straight away by Eisenach and Fulda, in case the Emperor utilised the Hessian, or to Hof, in case he chose the Frankish-Saxon military road.

As a matter of fact the design suited all cases equally well, but herein lay its weakness; for for no particular case were the measures calculated exceptionally and energetically enough as to promise a decisive success. The only favourable moment was allowed to pass.

After weighing all possibilities, the probable must finally be adhered to; our own mind must be definitely made up and all measures calculated upon their being vigorously carried out. In the instance I have here quoted the great leading idea was: a surprising offensive against South Germany. Loss of time weakened it, and this must accordingly be avoided under all circumstances. The design of operation could only extend to the rapid junction of forces forward in the direction of Bamberg, under utilisation of the nearest roads thither. Caution could only be expressed in rapidity, in proper vigilance and in the choice of the place of

meeting, so that the several columns might come into collision with parts, yet not with the whole hostile forces.

Dangers, doubts, and subordinate matters must not be overlooked, yet should only meet with consideration in so far as by so doing no weakening of the measures taken to carry through one's own intentions is caused. Herein may be seen the sense of the so often quoted but not always rightly understood maxim: "Erst wägen, dann wagen."

As in all great decisions in war, so also in the framing of the design of operation, a limited view of things is of paramount necessity. Whoever cannot descend to it will never, in the face of the goodly number of justifiable points of view which present themselves, come so far as to be able clearly to conceive of any great aim; he may perchance prove himself to be an acute critic, but never a great general.

5.—*Intelligence and Reconnoitring.*

Intelligence of the enemy is, as Clausewitz says, the basis of all ideas and actions in war. To it belongs, accordingly, a prominent place in these reflections. It is impossible to use any wiser judgment as to our own decision than to consider what will probably be the action of the enemy. Therefore, it is by no means permissible to make oneself dependent upon the actions of the enemy. Only he who sets about his task with a faint heart confines himself to the defence. The more vigorous resolve makes it its aim to force in spontaneous action the law upon the enemy, and to do it exactly in the place where the enemy feels it most acutely. In order to be able to do this, it is, before all, necessary to penetrate the enemy's intentions. Good intelligence gives a great superiority. "If one were at any time to be aware beforehand of the intentions of the enemy, one would always, with an inferior army, be the superior of him."*

A considerable knowledge of the enemy is, in these modern times, brought into the war ready to hand, as in times of peace his war organisation is carefully studied. And this is a material part of the labours of the general staff. A correct estimate of the enemy before the campaign, is the necessary basis of the whole of the Intelligence Department. As to the first gathering of the enemy's forces, one will not, as has been seen, be in complete uncertainty. Moreover, during the time that the first transports of troops take place, the enemy's land is not entirely closed; communications thence are possible. But at the commencement of the operations

* Frederic the Great, *General-principia von Kriege*, 1753.

things assume a different shape, and they speedily transpose and shroud in darkness the original picture. From that time on it is necessary to find each day fresh light. Among the means which offer themselves to this end, those which the armies possess of their own energy are to be preferred before all others. The name that espionage has gotten is undeserved. Its advantage in modern warfare is confined to a few cases. When, in 1870, it was perceived in France that the German commanders acted upon apparently good information, there arose loud cries of indignation against the Prussian espionage that could, as alleged, be everywhere perceived. This indignation only proved that the Grande Nation of those days had no very clear conception of the things appertaining to war.

As a matter of fact, the cavalry is the eye with which the army sees. The activity of this arm can best of all ascertain with clearness the measures and intentions of the enemy. Its celerity enables it, at the same time, to anticipate events. It discovers to-day what awaits the army to-morrow, or even later. Its functions are to find the enemy's columns on march, his camps and his vedettes, and, this done, to keep them constantly under its eye. It must surround the enemy like an elastic material, keep out of his way when he advances in force, but cling to him and follow him whither he retires. The intelligence that it brings, has the advantage of being immediate and of attaching to what is of importance at the moment. It has this great advantage over spies, that all the intelligence comes from professional persons. To these duties belongs much intelligence and appreciation of war; but the cavalry officer of the present is trained for them.

This gives occasion for some reflections as to the reconnoitre duties in general. Text-books speak much about some well-mounted officers, accompanied by a handful of daring riders, breaking through the enemy's vedettes, surrounded by the enemy's bullets, making their observations right in the front or in the rear of the enemy's main army. Such performances are at all times most creditable, but they are difficult, as the enemy will use his cavalry in the same way. They require an extraordinary amount of courage, extraordinary circumspection, and, in like manner, extraordinarily good fortune. Therefore, we must not build our calculations entirely upon them,* much as all good cavalry will

* In the campaign of 1870-71 there were many very successful reconnaissances executed by certain cavalry officers to chronicle; but we must not forget that the enemy's cavalry impeded but little their operations. In the future that may be different.

endeavour to distinguish itself therein. It is also of importance to have touch of the enemy at a considerable number of points. Scarcely ever will any one piece of intelligence give perfect information. The great dimensions, to which we must now call attention, prevent that. Yet reports from twenty or thirty different places give the picture we require.

It is quite as hard to frame reports well as it is to draw up orders. Perspicuity is here the chief thing. It is impossible to lay down rules as to what must be reported and how. In a great war it is only reports from officers, with few exceptions, that have to be considered. All the more must one, then, rely upon the judgment of the reporters. Only certain incidents are of such an important character as to entail immediate intelligence on the part of the observer. When the enemy is for the first time seen, when infantry and artillery follow upon his cavalry which has been hitherto alone perceived; when positions, which were believed to be occupied are found to be unoccupied, important passages open, rivers of importance unguarded; when a noticeable change is observable in the enemy's line of march, and when, moreover, cannonade announces a collision, intelligence is always sent back in order to quickly acquaint the commanders of the following columns. Frequently, it is quite as important for the commander-in-chief to know that his cavalry have nothing to report, that they cannot discover the enemy in any given direction, as it is that he has been met with in another. The security of the general is materially enhanced by the negative supplementing the position. From this fact may be seen of what importance energetic reporting is, even when there is no special news to give.

Of course hearing and hearsay will also, in the case of the cavalry, amplify to a great extent what has been seen.

Careful inquiries made of the inhabitants are also important. The means of communication have in these modern days increased to a very great extent the general interest and the public curiosity. Reports of great army movements always spread. Often it is quite enigmatical how quickly, in spite of interruptions in the ordinary means of communication in war, dark intelligence flies which is correct at the core. The country population in the neighbourhood of Metz had news of the march of MacMahon to Bazaine's relief, at a time when that movement was as yet in embryo, and none of the great battles had occurred that preceded Sedan. Of course there is here perceivable a great difference among nationalities. From the silent Russians and English it is certainly much harder to obtain anything than from the lively and

talkative French and Italians. But something can always be learnt. And here it is by no means necessary that the country-scouring vedettes should succeed in finding traitors to give important information. Each person, when asked, will rather, in order to put an end to the cross-questioning that is annoying to him, say only what appears to him to be unimportant. But from a hundred unimportant things one important piece of news can be composed.

And we are, moreover, entitled to draw the contrary conclusion that, in districts from which nothing is heard, no warlike movements as a matter of fact are being undertaken. This conclusion must not be disregarded. It increases, also, the certainty to a considerable extent. It is not correct to imagine enemies everywhere. One may calculate that where they are they will soon make themselves perceivable in one way or another.

All personal reflections of the reporter must be strictly banished from the intelligence. The only requisite is to announce all that has been seen exactly as it happened. It is the province of higher commanders, who are capable of understanding the connection of the single phenomena with the great whole, to perceive its importance.

Very frequently the proposal of a reporter has been the cause of operations which, though appearing advantageous from his point of view, yet ran counter to the interests of the army in general.

When the Duke of Brunswick, in 1806, wished to undertake the carefully-planned march through the Thuringian forest, he sent Captain Müffling ahead across the mountains to investigate. The captain found the French already in motion towards Saxony, and the country lying on the Frankish Saale, where they were supposed to be in force, abandoned. That appeared to him to be void of all "sound sense," as Napoleon had left his rear communications towards the Rhine without protection. Müffling took this opportunity to advise the Duke to operate against these communications. He described beforehand the fine *coup* that could be made. He certainly intended, of course, only to employ cavalry for this purpose. But the more cautious Duke, who did not wish to allow the inviting opportunity to escape him, but yet who was not desirous of exposing it to danger, decided to send infantry and artillery with the cavalry. And so it came to pass that during the decisive double battle of 14th October the Prussian army, which, apart from this, was much inferior in force to the enemy, had further weakened itself by the despatch of 11,000 men in a perfectly ineffectual expedition against the French lines of communication. It was Müffling who, by these spontaneous additions to his report,

aided in causing this mistake, which is one of the worst that were committed by the Prussian commanders in those disastrous days. Every report must likewise plainly distinguish between what has been actually seen, and what is of foreign origin. After it has been committed to writing, the art of the reporter will consist in putting himself faithfully into the situation of the recipient, in order to guarantee that everything will be intelligible to him.

Valuable additions to its intelligence can be given by the cavalry by capturing papers. It first of all enters places in the enemy's country hitherto undisturbed, finds letters in the post office and telegrams at the telegraph office,* newspapers in the possession of private persons or in the hotels and restaurants. These are valuable means of acquiring intelligence. The cavalry must display a talent for finding. Even the most insignificant thing must not escape it, provided it is worth observing. Moreover, it is not difficult for enterprising commanders to animate this duty, as every man has a certain measure of pride in making discoveries, which only requires to be aroused.

In order to see much, the cavalry must spread itself out considerably. If it is able to extend beyond the enemy's wings, that is a considerable advantage. With all the more certainty will it, at the same time, conceal the movements of its own army. But the veil, on the other hand, must not be too thin, in order that the enemy cannot break through it. Bodies of horse must follow the patrols, in order to prevent this.

The enemy will think and act in the same way. The natural consequence is, that the cavalry divisions which precede the armies speedily come into collision. Where the space between the armies in advance, and the nature of the terrain, do not preclude it, the operations are ushered in by a number of cavalry skirmishes. Only that side can chronicle valuable successes in the intelligence department that succeeds in previously defeating the enemy's cavalry. Then only will the individual officers and small detachments be able to penetrate to the enemy. As a matter of fact, it is only a superior force of cavalry that is of service,† for the weaker will, without fail, be very quickly driven back upon the columns of the army corps following it up on march, and here it is rather an impediment than a help. It can then neither conceal the movements of its

* As is well known, during the campaign on the Loire the draft telegram book of a French station that was found gave the *ober-kommando* of the IInd army many disclosures.

† Wherein, of course, superiority must not be exclusively looked for in numbers, but in a correct proportion of efficiency and numbers.

army nor yet discern those of the enemy. This circumstance must be taken into account in the question so often discussed as to how much cavalry one ought to have. As many things in the military constitutions of modern civilised states, the number of cavalry also depends upon relations of reciprocity subsisting between those Powers that may possibly be arrayed as enemies against each other.

Much has been spoken in modern times of far-reaching excursions of great masses of cavalry in the flank and rear of the enemy, which go beyond the object of intelligence, and have for their aim the destruction of railways, telegraph-wires, bridges, magazines, and depôts. The American War of Secession made us familiar with many such "raids," on which the names of a Stuart, an Ashby, a Morgan, and others, attained great renown. But, in attempting to transfer them to our theatres of war, we must primarily take into consideration the different nature, civilisation, and extent of the most European countries, but especially those of the west. Then, regard must be paid to the different composition of the forces. When a squadron of horse improvised by a partisan was defeated in such an enterprise, or if, when surrounded by the enemy, it broke itself up, that was of little consequence. It was only necessary that it was first paid for by some successes. Quite a different impression would be caused by the annihilation of one of our cavalry regiments, that by history and tradition is closely bound up with the whole army, that, when once destroyed, cannot so easily rise again as can a volunteer association of adventurous farmers' sons.

(To be continued.)

Naval Reform.

TRANSLATED FROM THE LATE MONS. GABRIEL CHARMES' "LA RÉFORME
DE LA MARINE."

By J. E. GORDON-CUMMING.

CHAPTER II.—*cont.*

NAVAL WARFARE AND THE ORGANISATION OF NAVAL FORCES—*cont.*

PROBABLY there are no two works on naval tactics which agree as to the formation for battle to be observed by two squadrons. Some prefer the line ahead, others the line abreast, others the quarter-line, whilst the more sincere, confess their entire ignorance. The latter alone are right. Whatever tactical combinations may have been planned beforehand, all naval actions will soon degenerate into a series of single combats, in which each vessel will attack another belonging to the enemy and endeavour to sink it.

It is probable that the cannonade will only, as at Lissa, be the prelude to action.

Although the gun has always proved itself stronger than armour-plating; although the best plates in the experiments against fixed targets have never withstood the firing of the most powerful projectiles, the effect of artillery directed against moving ironclads would never be decisive in one of these general fights, where the density of the smoke makes it impossible to hit an adversary in the most vulnerable points or cause irreparable damage.

We have seen the *Huascar* come out of its fight with the English *Shah* and the *Amethyst* without much damage done to it.

"The state of the *Huascar* after the battle," says a military correspondent, "proves how more or less useless artillery becomes on the day of action at sea. There is a wide difference between this and the results to be obtained at fixed targets. . . . The monitor was struck by seventy or eighty projectiles. No projectile of 23 centimètres pierced its armour."* And this was a case

of one ship fighting against two. Between more evenly-matched squadrons the results would be still less important.

The boarding of other days has been succeeded by the attempt to ram one ironclad against another. It is impossible to calculate what would be the result of each of these separate duels, the sum total of which would form a battle, just as the wars of Homer were composed of a multitude of single-handed fights without any apparent connecting link. The merits of the captains, far more than superiority of arms, would decide the matter.

Just as sometimes occurs in collisions between merchant-steamers, so two ironclads, bringing their heavy bulk into collision, will sink at the same instant, and through the same blow, be swallowed up by the waves. Occasionally only one may be destroyed, but it is almost certain that, driving her ram into the hull of her adversary at full speed, the one that does not succumb will be very seriously damaged, as sometimes happens when merchant-steamers come into collision, and the vessel which strikes the other nearly always loses its forepart.

A still more striking example is the case of the collision between the *Kron Prinz* and *Friedrich-der-Grosse*. On this occasion, the ramming vessel owed its safety entirely to the immediate neighbourhood of an English naval dockyard, which gave it shelter and the means of repairing its serious damage.

The conqueror will remain disabled, incapable of steering, deprived of speed, at the mercy of the weakest adversary ready to fall upon it.

The largest squadron will, therefore, be sure of ultimate success. If it has taken the precaution to hold a few ironclads in reserve, whilst the others have tried their strength against the enemy, even if it has been worsted in the first encounter, it will only require to bring forward this reserve in order to annihilate the shattered remains of the conqueror. Thus, number will decide the whole issue.

"Be numerous," will be the only lesson in naval tactics, which one cannot call a science, as in former days. "For," writes a tactician, "in future their character must always be speculative, and can never again resemble those branches of human knowledge founded on precise dogma and fixed rules."

But if the author we have just quoted spoke, in those days, of the future, would he not now be speaking of what actually exists?

Is it not evident that in conditions similar to those we have

* *Revue Maritime*, 1881, "Des opérations de guerre maritime récente."

described, no squadron, even if commanded by the most intrepid chief, would have the audacity, or rather the folly, to attack a squadron more numerous than itself?

The not-far-distant past answers for what is in the future.

Since the invention of steam, we have only witnessed one squadron fight, the battle of Lissa. Its issue would naturally inspire confidence in navies numerically weak, as it seemed to prove that courage on the part of the *personnel*, added to the genius of the commander, made up for quantity and quality in the instruments of warfare.

But what did we witness when France and Germany, and later on Russia and Turkey, came to blows? In these two wars, wherein, for a time, it was thought that the navy would play an important part, the nation possessing the fewest ironclads withdrew from fighting, sheltered her fleets behind the walls of her forts and the torpedo lines in her harbours, and, without a struggle, relinquished to the enemy that "empire of the sea," which in the beginning of the century England had only attained by means of the brilliant victories of Trafalgar and Aboukir.

Is this flight, this confession of weakness, to be accepted by the vanquished as a sort of moral defeat from which she would have to suffer as much as from an actual defeat? By no means; for, only to cite the war between Turkey and Russia, far from resigning herself to naval inaction because she had given up squadron fighting, the latter Power, after inflicting most serious injuries on the Turkish monitors by means of torpedoes carried in boats, did not hesitate for a moment to threaten England herself, and to prepare to attack her vigorously.

When our neighbours from over the Channel sent their fleet to Besika, once again to save the Ottoman Empire, which of us does not recall the sensation produced by the news that Russia had purchased a fleet of cruisers, with the intention of attacking and destroying British commerce on every sea. A legitimate sensation, for if war had broken out it would not have been limited to the Eastern basin of the Mediterranean where the British ironclads so proudly bore the national flag. Whilst they advanced towards the Dardanelles, a Russian fleet, made up of seven cruisers and transports, suddenly left that port of Vladivostock which has arisen in the extreme East like an advanced work threatening the foundation of England's strength, and made its appearance before San Francisco. The English naval forces in those parts consisted at that time of only two ships at anchor, one at Honolulu, and the other at Vancouver.

From the very commencement of hostilities, Esquimaux, the only coaling depôt, and the only port in the whole Pacific where English vessels can go for repairs and revictualling, would have fallen into the power of the Russians, who, once masters of the ocean in that part of the world, would in their turn have expelled the commerce of their rivals; a much more serious disaster than the loss of a battle. According to the *Pall Mall Gazette* the English commerce on the east and west coasts of Africa may be reckoned at £160,000,000 sterling.

This would have been the first stake in the war. Of what use then, is it to possess the most powerful squadron in Europe, if it can only go about slowly in the Mediterranean, and on the European coasts (where it will never overtake an enemy determined to escape by flight from almost certain defeat), and if it is unable to blockade the enemy's ports in every quarter of the globe, so as to arrest cruisers sallying forth to roam over every sea, and commit their terrible depredations? Not only has squadron warfare ceased to have any rules, principles, or scientific methods, but, what is still more decisive, it is no longer of any importance; the fruits of a victory do not even compensate for the efforts made to achieve it.

Since the invention of steamers, and the advance made in speed, the "empire of the sea" has become an empty phrase, and a meaningless expression. The greatest triumphs no longer secure the sovereignty of the ocean. After Aboukir and Trafalgar England was able to close our ports from Cadiz to Antwerp, from Gibraltar to Naples; unceasingly to menace our landing-places, such as Walcheren and Quiberon; to surprise our cruisers; destroy our privateers; separate our colonies from the mother country; and take possession of them one by one; to monopolise the trade of the world by hunting ours down without mercy. We had no more fleets, and hers were more powerful than ever.

It is true that we attempted to send light frigates in pursuit of her trading vessels, and that, sometimes, by at first escaping observation, they were able to inflict some little damage; but as they could not achieve any greater speed than the English squadrons, having equally to depend on the wind as their motive power, notwithstanding all their efforts, and the heroism of their brave captains, they were always surrounded, overcome and captured in the end. Their more or less glorious tale had always the same finish. Times are changed! Now-a-days it would neither be possible for the English navy, or the united naval force of all Europe, to effect a strict, effective, and thorough blockade of such an extensive littoral as, for instance, that of France.

To maintain a blockade the besieging squadron must always be at highest tension, steam for full speed ready; otherwise rapid cruisers may succeed in running the blockade at night, and gaining the open sea, there to roam about the commercial highways, and accomplish more ruin and disaster in a few weeks than could be done to any country whatsoever by years of blockade.

The war of secession started a special type; the blockade-runners. They will be improved each time a fresh war arises. And everyone must be aware that no ironclads could incessantly keep all their fires alight without exhausting their coal, and moreover, that their engines would be incapable of resisting such a strain without deteriorating.

"The maximum of speed," says Admiral Aube, "depends on the tension of steam, and this tension cannot always be maintained except when in motion. This implies a consumption of coal which, as the supply must be kept up, must eventually paralyze vessels, and it further implies the still more fatal wear and tear of machinery, which, for the sake of speed, must necessarily be very fragile."

Moreover, big ironclads can only boast of a normal speed of 8 to 10 knots, never making beyond 13 to 15 knots; cruisers and big merchant steamers, which are always convertible into cruisers in time of war, make 17 knots, and some have even reached 18 knots. But there is no doubt that greater speed will be obtained. From that moment it will be easy to force any blockade; we do not mean at night, which is always an easy task, but in full daylight, in the face of an opposing squadron.

It is thus evident that squadron-fighting has no further reason for existence, as the command of the sea would never through its means be secured to the nation to whom it gave the victory.

If a squadron-fight took place so lately as 1866 between the Austrians and Italians, it was owing to the fact that an ironclad navy was then only feeling its way; it was going through a period of uncertainty, and, therefore, of mistakes. In confirmation of this, we may state that, alongside of the Italian ironclad division was Admiral Albini's whole sailing squadron, which did not dare to come into action, and subsequently abandoned the Admiral in command. Admiral Albini deserved condemnation as much as Admiral Persano.

But Tegethof's late flag-captain, who manages the naval affairs of Austro-Hungary with so much skill at the present date, has just informed the delegates that, as the reign of ironclads is at an end, the programme and tactics of his former chief must be abandoned. In the course of all the other great maritime wars we have witnessed

during the last few years—in North America during the War of the Secession, in South America during the war between Chili and Peru, we have had the most convincing and practical proof of the inutility, the impossibility of the blockade, which used to be the sole advantage in squadron-fighting. Were the sixty ships sent in pursuit of the *Alabama* and the other Southern privateers able to prevent their enterprises, so disastrous to their enemies on the ocean? Did the active watchfulness of the Chilians on the coast of Peru stop the *Huascar* and the *Union* in their audacious campaigns? And during the dark months of 1870 and 1871 were not most of our captures effected by isolated cruisers, although a false generosity had absurdly restricted their number; whereas our blockading fleets could only inflict insignificant losses upon Germany.

A war of pursuit will, therefore, necessarily, fatally, definitely, replace squadron warfare in future conflicts between maritime nations.

Vainly do philanthropy or international rights attempt to oppose the natural course of events; by one of those contradictions by no means uncommon in history, cruising was solemnly condemned at the Congress in Paris at the very moment it was to become such a necessity, that without it we cannot possibly imagine how naval battles could be anything more than passages-at-arms as fruitless as they would be sanguinary, or fictitious tournaments in which the extent of disaster would only be equalled by the insignificant results obtained at such a cost.

We do not merely allude to the appearance on the scene of an ironclad navy, which bids fair to transform the fleets of the Powers into squadrons made up of a small number of useless vessels, incapable of guarding the seas after victory.

But it was at the Congress of Paris that the principle of nationalities destined to transform Europe received its first sanction, and in some sense its official baptism, by implicitly recognising that the aspirations of Piedmont were legitimate. By degrees, Italy was created, then Germany, and all over Europe national unities sprang up ready to indicate their right to exist, that is, to extend their frontiers.

We have seen their struggles for existence; the consecration of their utmost resources to conquer military power by armed force, failing which there can be no political power. But no sooner did they consider their frontiers secure, than they directed their attention to the seas, whence riches and prosperity are exclusively derived. No sooner were they free than they set to work to form an industry and start their trade.

Now, commerce can only be developed by securing outlets in every part of the world, and thus securing raw material as the necessary aliment of the national workshops. Hence that universal movement of nations towards unoccupied territory, towards distant shores, towards uncivilised regions, which, under the name of colonial policy, seems to have become the principal and almost the only European ambition. It would doubtless be rash to state that great nations will soon cease to dispute political supremacy on the Continent. But we may say, without fear of contradiction, that they will in future fight for the commercial supremacy of the sea.

Economical rivalry will be hotter than military competition. A realistic, practical policy will seek for material advantages before and above all others, as they are the source and origin of all others. And as public wealth only results from private wealth, it is evident that if, in future wars, we are to divert some great commercial resource from a country, or to deprive it of some monopoly, we must unflinchingly attack private property, and aim at destroying its general prosperity by a series of individual disasters.

In proportion as the number of united, strong, and ambitious nations has increased, so has the number increased of those who are anxious to turn the globe to their own advantage, and the greater are the chances of those naval conflicts, which can only be settled by pursuit; for, as the weapon employed must always be suited to the object in view, it is quite certain that, despite the eloquent remonstrance of philosophers, and platonic declarations in congress, none will give up the chief aim of war, the chance of destroying an enemy's mercantile navy, to amuse themselves experimenting with its fleet on naval tactics, gaining no other advantage than to prove the superiority of numbers, and the infallible power of great squadrons.

I must be forgiven if I again quote that admirable pamphlet the *Battle of Dorking*, teeming as it does with the prophetic instinct of a far-seeing mind:—

“Fools that we were! We thought that all this wealth and prosperity were sent us by Providence, and could not stop coming. In our blindness we did not see that we were merely a big workshop, making up the things which came from all parts of the world, and that if other nations stopped sending us raw goods to work up, we could not produce them ourselves. True, we had in those days an advantage in our cheap coal and iron, and had we taken care not to waste the fuel, it might have lasted us longer. But even then, there were signs that coal and iron would soon become cheaper in foreign parts, while, as to food and other things,

England was not better off than it is now. We were so rich, simply because other nations from all parts of the world were in the habit of sending their goods to us to be sold or manufactured, and we thought that this would last for ever. And so, perhaps, it might have lasted, if we had only taken proper means to keep it; but in our folly we were too careless even to insure our prosperity; and after the course of trade was turned away it would not come back again. . . . But our people could not be got to see how artificial our prosperity was; that it all rested on foreign trade and financial credit; that the course of trade once turned away from us, even for a time, it might never return, and that our credit once shaken might never be restored. To hear men talk in these days, you would have thought that Providence had ordained that our Government should always borrow at 3 per cent., and that trade came to us because we lived in a foggy little island set in a boisterous sea."

Hence it would appear that the chief aim of war against the greatest maritime Power will be to divert its commerce. Now what is essential towards doing this? Let us glance at what occurred in America during the War of Secession:—

The operations of the Confederate cruisers [says M. Dislère,] had not only obtained a material result: the capture and destruction of a large number of American vessels. Up till the month of May 1864, 239 vessels, making a total of 104,000 tons, and worth more than fifteen million dollars, had been destroyed.

The moral effect had been still more considerable. Most of the Federal mercantile vessels had become the property of English owners. In the year 1863 alone, the transfer of 348 vessels was registered, making a total of 252,000 tons. The insurance tax had reached a figure ruinous to the commerce of the North. The war was eventually protracted not only by the resources furnished by the blockade-runners, but still more by the confidence inspired by the repeated exploits of the *Semmes* and *Waddells*, and their imitators, in the minds of those defending the rights of the States.*

Do not these facts shed a perfectly new light on maritime warfare? Let us take, for example (and merely as an example, we sincerely trust), the hypothesis of a conflict between France and England. To please the partisans of squadron warfare, let us even imagine our fleet destroyed or blockaded by the English squadrons; would the mercantile navy, on which our neighbours depend for sustenance and trade, be even then secured? Cruisers would escape at every moment from the shores of our three seas, and reach the great commercial highways of the ocean. These highways, on which the riches of the world circulate, which, in some sort, are the arteries supplying the life of this immense British Empire, are by no means numerous. There are five or six,

* Dislère—*Les Croiseurs et la Guerre de Course*.

perhaps ten at most, which we could continually scour. Doubtless there are strongholds like Aden, Malta, Gibraltar, to defend them. But of what avail will these be? It is not beneath the fire of these fortresses that our cruisers will endeavour to accomplish their exploits. On the contrary they will avoid all known or possible dangers.

A war of chase has its own rules, and we must have the courage openly to own them. These are to fall without pity on the weak; and without false shame, and with all possible speed, to fly from the strong. The moment they sight an enemy's fortress or squadron, or even a man-of-war, not even necessarily superior to their own—in fact, the moment they anticipate any resistance which might interfere with their mission of destruction—cruisers should fly at full speed, and carefully decline unequal combat.

But the immensity of the ocean would remain to them, and they would roam up and down to sink merchant ships, and cut off the adversary's communications with its colonies and the rest of the world.

The author of the *Battle of Dorking* has just told us what the consequences of a war carried out on these lines would be to England. Let us go into further detail.

Last year (1885) England imported 75 million *hectolitres* of wheat, required for home consumption, the freightage of 1,000 vessels; she imports cattle in immense numbers, chiefly from Canada and the United States; and, besides these staples of food, cotton, wool, alpha, minerals, &c., all of which are necessary to her trade. How many squadrons would she need to escort those immense convoys and protect them from the attacks of cruisers?

Were she even possessed of three times, or five times, as numerous a defending force, it would still be insufficient for the protection of the cloud of vessels annually bringing 15 million tons to the ports of the metropolis alone, and distributing 17 million tons of English produce over the world.

Hostilities would no sooner commence than what happened in the American War of Secession would again take place; the premium on insurance against losses at sea would become so high that navigation would be impossible. Even at the time of the insignificant expedition of Tel-el-Kebir the insurances for ships going through the Suez Canal became so enormous that prudent shipowners preferred to lay up their vessels. What would happen, then, in a real war? All the rivals of England, all the young ambitious nations already possessing a commerce and aspiring to a mercantile navy, would eagerly do by Great Britain as she did by America in the

Secession. Each would emulate his neighbour in striving for a portion of the great prize.

Were the struggle to last for any length of time, the ruined ship-owners would be obliged to sell their vessels to foreign Powers. New steam companies would, by degrees, replace the dispossessed English companies, and, this change effected, and the stream of trade diverted into new channels, why should it return, on the restoration of peace, to that "foggy little island set in a boisterous sea" which, during so many long years, has monopolised the riches of the universe by the marvellous genius of its people and their still more marvellous luck?

Let not shortsighted philosophers tax us with barbarism. Heaven forbid that we should wish evil to happen to England, or rejoice beforehand in what might bring her fall. But the example we have selected substantially proves the overwhelming results of a war of chase and, if we may be forgiven a seeming profanity, it further proves its civilising tendencies.

Although the means towards attaining this new strength for the weak may be terrible and barbarous, the results will certainly not be opposed to the cause of humanity, for, in time, entire freedom will be secured on the ocean, its empire will be snatched from those few nations hitherto more fortunate than the rest, and its sceptre shattered in their impotent hands, to be apportioned in fragments to the whole universe.

It may be necessary to pass through cruel revolutions before reaching this new phase, which may really be considered the triumph of equality. It is one of the conditions of our imperfect nature that even what is good cannot be produced in our midst without many shocks and convulsions.

Who knows whether the extreme danger that cruising lends to maritime warfare may not induce the forts to give in without a struggle to the inevitable consequences of commercial and political rivalry, and to consent to the loss of those privileges they are unable any longer to maintain. Economical law everywhere tends to equalise riches and to level all markets, to lower those that are high and raise those that are low: *Deposuit potentes de sede et exaltavit humilis.*

Is it not remarkable that the laws of warfare tend to the same result, and that the strength of nations and their interests are becoming more and more equalised? We shall doubtless be told that, although the case of England conclusively proves how useless squadron warfare is, and how essential it is to replace it by a war of chase when fighting an entirely maritime nation, it is quite a

different matter when a continental nation, where the navy is not paramount, is to be attacked.

It may be said that squadron fighting may be very useful against such a nation. Having once annihilated its naval forces, and being sure of no further resistance in that quarter, we should be free to land an army on the enemy's territory, and much bloodshed would be the result.

This will be in truth, as we have already stated, one of the consequences of squadron victories. But here, again, times are changed. Armies are not what they were in former days.

The number of troops we could land on the adversary's shores would not, certainly, decide the issue of a war. And the operation would be very hazardous. "An expeditionary force," Admiral Aube says, "can only cross the ocean by special vessels called transports, and under the following conditions: a thousand men in each ship, an average of 500 horses, which for an army of 80,000 men and 8,000 horses means 36 vessels. These vessels must have at least the space of one cable between them for navigation, and at most two lines, which gives a length of 3,600 *mètres* to this double line, each vessel, including the bowsprit, averaging 100 *mètres*. To ensure uniformity, the speed, regulated by the slowest vessel, could not exceed 8 miles; every time the Channel was crossed to hostile shores at least 48 hours would be required. Admitting this, what Admiral would undertake to prevent a vessel with a ram, and going at least 13 knots, from making a gap in the squadron of transports? Without thinking of any special act of ability or superior bravery, which of our captains would not willingly undertake this task, especially at night, and undertake to sink a considerable number of the enemy's transports before his own vessel could be reached? We know how rapidly the *Congress*, an American frigate with 60 guns, sank and disappeared in the waves when attacked by the *Merrimac*, although the latter was only a coarse and imperfect imitation of our present rams. In this scene of carnage, during the American War, more than 200 men met their death, although the *Congress* was anchored near the shore. From this we may form some opinion of the risks to which an expeditionary army would be exposed in one of these nights, compelled to keep the sea, and far from all assistance."*

The preliminary danger avoided, and supposing a landing to be effected, what would become of a body of 80,000 men, in the

* Admiral Aube, *Les Réformes de notre marine militaire*.

presence of one of the armies of the present day, if it could only be revictualled from the squadron that had brought it, and were consequently forced to keep the sea as its base of operations? As soon as it landed, would it not be surrounded and overwhelmed by the superior masses, annihilated by the greater number, and forced with all haste to return to the point of disembarkation from which it had ventured?

When people speak of the combinations of former days they forget that the conditions of continental warfare are no less modified than the conditions of maritime warfare; and that the forces that we must put into action, if we are to strike a decisive blow, are so numerous that they must be founded on something more solid than the waves of the sea, or the vessels composing a fleet of transports.

In a Continental war, pursuit will still inflict the most damage on the enemy. Would not our situation in 1870 and 1871 have been still more aggravated, would not our resistance have been shortened by several months, if German cruisers had arrested the numerous vessels bringing us arms and provisions, to replace those we had ceded to Germany at Sedan and Metz? Our arsenals were empty, our trade was very slow; but the markets of the world were open to us, and we drew plentifully from them. Even in the midst of those terrible disasters, our mercantile relations with other nations were maintained, our exterior riches remained intact, our national industry did not receive its deathblow. Hence came it that our prosperity was so soon restored. Things would have been very different had all our merchant-ships been destroyed or captured, had our relations with Algiers been cut off, had our losses equalled our misfortunes. Ruin would have followed defeat, and cruelly aggravated its consequences. Could any occurrence on our coasts have produced greater calamities?

2.

Hitherto we have intentionally left out any mention of torpedoes, wishing to prove that steam alone sufficed to bring about a maritime revolution, and that those who opposed squadrons and advocated a war of chase, demanding that ironclads should be given up and cruisers constructed, had not only a prophetic insight into the future, but a very accurate, just, and ample appreciation of the present.

It must, however, be recognised that their opinions have received such striking confirmation from the introduction of the torpedo, the improvements that have rendered it automatic, and the inven-

tion of autonomous torpedo-boats, that they are, to a certain degree, renewed and revived.

Admitting it to be impossible to find definite rules of tactics in squadron-fighting, they maintained that it was necessary to apply the principle of doubling on the enemy and of flank movements to naval attack (the employment of which had brought such success to the armies knowing how to employ and put it in practice on land); that the employment of numbers and masses directed against the same adversary, harassing it simultaneously from different points, and attacking it at different angles, should replace that fatal consequence of squadron-fighting, single combat between ironclads, in which the pattern possessing the greatest perfection was always sure to win; that the most perfect of the giant ships armed at once with guns, rams, and torpedoes could not resist a cloud of small gun-boats, mere floating gun-carriages, and torpedo-boats manœuvring at a higher speed than herself, pressing her on every side, attacking her repeatedly, and able, by their speed, to escape her reprisals; that, in one word, at sea as on land, progress in the means employed should lead to their separation, their classification, and the triumph of extended over compact order.

These arguments were answered by the assertion that the minute and agile engines on which they founded their hopes were impossible of construction; that a vessel of heavy tonnage was essential towards carrying the guns; that the torpedo was a weapon not to be depended on; that we had by no means mastered it, and that a vessel suitable to it had not, and probably never would be found.

The startling invention of autonomous torpedo-boats shattered all these objections at a single blow. From the moment that these small vessels, hitherto considered unseaworthy, began to show navigating qualities of the highest order, from the moment that their terrifying power of destruction was fully brought to light, it was no longer possible to deny that fleets could be constructed in a very short time, and at relatively moderate cost, able to surround and destroy great squadrons.

The problem of gun-vessels, hitherto declared unsolved, is not more so than that of torpedo-boats; it can, and ought to receive the same solution.

We purposely left rams out of the question, because, in our opinion, the shock of two vessels would destroy both; and for a ram to be efficacious against a big ironclad it would need to be almost as large as its opponent. The ram can be, and ought to be, replaced by the spar-torpedo, the effect of which is quite as terrible as that of the ram. From that moment what would remain

of squadron tactics, of the tactics of former days? If attacked at night, and in the open sea, could any combination, the adoption of any line or order of battle, any strategical means, help any ten ironclads, however admirable, to resist the sudden and impetuous attack of some hundred light and easily managed boats manœuvring with lightning speed, falling on them from every point of the compass, and surrounding them with their double or triple meshes of destruction?

The torpedo-boat, backed by the gun-vessel, will be the means of the final disappearance of ancient tactics, just as a single gust of wind dissipates slight mists on the horizon. The most determined defenders of ironclads feel this so strongly, they are so thoroughly convinced of it, that they are already confident that, in future, a squadron will never again venture on the open sea unless protected by lines of torpedo-boats, despatch and defensive gun-boats fitted to encounter the attack they themselves are powerless to resist.

The squadron-fighting of former days will be succeeded by flotilla conflicts; by a war of atoms; by charges of marine cavalry, if we may use the term, in which the most insignificant might decide the fate of the most powerful.

If this is so, of what utility are the latter? What purpose can they fulfil, or of what good are they? Let us admit, although nothing would be less likely, and although experience points to the contrary, that they would be protected by their advanced guard of small vessels. This supposition is, of course, purely gratuitous, for it is quite clear that if defensive torpedo-boats and gun-boats have to fight against adversaries as small and rapid as they are themselves, which a single wave may obliterate from their sight, and which at night give no mark for their guidance, they will have far less chance of success than offensive torpedo and gun-boats; for those, without stopping to fight their equals, will directly attack the enormous and continually visible mass presented by the ironclads.

But, once again, we will suppose the ironclads to have escaped. What will be the result? Will the empire of the sea belong on this account to the nation who owns them? Will the miraculously preserved vessels be any more capable of efficiently blockading the coasts of the vanquished nation? Most certainly not. If they attempt this enterprise they will find themselves in the presence of a fresh difficulty, which we have not as yet pointed out, but which is calculated more than ever to increase the difficulties of blockading in the future.

We limited ourselves to showing that a fleet watching a port, a harbour, or a bay, could not have steam up the whole time without speedily expending its coal, and wearing out its machinery; and that in consequence it would not be able to stop cruisers and blockade-runners. But torpedo-boats will now sally forth from the blockaded coasts as well as cruisers. The besieging squadron will be obliged to remain on the open sea, to avoid surprise by a submarine torpedo. For this reason we never dared approach the German shores during the war of 1870-1871. We were at least safe in the open. Now-a-days it would be quite different. The incessant attacks of torpedo-boats would be a hundred times more dangerous for a blockading squadron than for a squadron in motion.

Think what an existence it would lead, opposite a coast ready at every hour of the day, at every instant of the night, to disgorge invisible enemies upon it, ready to attack it unawares, in fog, in darkness, and in silence. If it protected itself with netting it would be unable to move, and would remain at the mercy of outrigger torpedoes and guns, which could easily aim at a stationary mark. If it contented itself with electric lights, its boilers and machinery from always being in use, and its watch from being for ever on the alert, would be exhausted in a few days; and when men and things had lost all energy, the inevitable danger would suddenly burst upon them. Human endurance, however great, could not hold out against such a strain.

Either in the papers or in letters from China, who has not read the piteous accounts of the moral sufferings undergone by our brave sailors during the long months they passed before Foo Chow doing nothing, and yet exposed to destruction at any moment?

Their straitened circumstances, and their unbearable condition of exasperation, had reached a pitch that would have brought about grave complications had it lasted only a few weeks longer. And yet the danger was not serious at Foo Chow; there was small chance of a surprise, the torpedoes and torpedo-boats were in no way to be feared.

There is nothing more demoralising for the stoutest hearts, for the bravest spirits, than doubt and indecision, and those intangible dangers they cannot come face to face with, and which glide on in the night season like phantoms, to be transformed into horrible realities at the very moment when, worn out by the incessant strain, attention relaxes and energy falls back on itself conquered and shattered, not by fear, but by lassitude.

If squadron-fighting has become impossible since locomotive tor-

pedoes and autonomous torpedo-boats, were invented, it follows that the only advantage to be derived from squadron successes, namely the empire of the sea and its accompaniments, has become still more impossible.

On the other hand, a war of chase—the weapon of the weak against the strong—acquires new facilities and marvellous efficiency through their agency. By putting an end to blockading, torpedo-boats enable cruisers to make any part of the shores of a great country their point for departure and re-visitalling. They can come and go to re-coal or deposit their prizes, if they have any, without the risk of being shut in by an enemy's squadron. They are masters of the ocean, and from afar can harass the slow and heavy ironclads at will, or escape on their approach by their superior speed. They can even go through their lines to force a blockade, like the famous blockade-runners in the War of Secession.

But this is not all; for another system—a war of pursuit—will certainly make its appearance on the scene in the next maritime war. The minute torpedo and gun-boats, destined to be so efficient in squadron attacks, will not be less so when attacking merchant-ships. Provided they are escorted by a transport, capable by its speed of escaping the threatened attacks of the ironclads, they will be able to keep the sea for a long time without being seen or noticed, and will always be ready to fall upon a disabled or insufficiently-armed opponent. And what nation so poor, but it will possess sufficient resources to provide itself with weapons of war, so moderate in cost?

One of the most splendid and at the same time the most terrible consequences of the immense progress of modern invention, is that the richest and most powerful people with the biggest manufactories, may now be at the mercy of an adversary it might formerly have destroyed in a few hours; that the admirable mechanism of its material prosperity may be taken to pieces by a hand that formerly would have been crushed by merely touching it. In view of the insufficiency of her naval strength, England is at this moment going through a phase of doubt and fear which becomes more prominent every day. Her statesmen tremble for the future, and endeavour to meet the situation by increasing their fleets.

The attempt is vain, for the problem is not to be solved. They may double the number of their men-of-war; their maritime frontiers may bristle with fortifications, they may make them impregnable by protecting them with armour, big guns of immense weight, and even torpedoes of every sort, but they will never hinder

even a third-class maritime power from inflicting irreparable losses on their country. A few kilograms of explosible material, or several swift vessels, would suffice to destroy their biggest mail steamers in the course of a few moments.

And what took place on the open sea would equally take place on the coasts; for the special law of this war of chase is to attack open ports, undefended towns, and unfortified mercantile warehouses. From the moment it became lawful and even obligatory to attack private property on the sea—because if it were not attacked no war would be possible, and the strong would always be at liberty to crush the weak without mercy, to arrogate the right to make his own use of the world, to regulate every market, to monopolise the riches of the world—from that moment similar property on land must come under similar conditions. No city whatsoever should be spared, still less a prosperous one, any more than a mercantile fleet. It comes to the same thing, whether the produce of a country is set on fire on board its ships, or when stored in its docks and warehouses; or, rather, the latter operation has the material and moral advantage of being more decisive. It is certain that an adversary will be brought to terms quite as quickly by depriving him of one of his commercial ports as by depriving him of a military port, just as dispersing his merchant shipping will attain the same result a great deal quicker than destroying his men-of-war.

Would the loss of Marseilles be less serious than that of Toulon? Now, a few 14-centimètres gun-boats suddenly appearing on the scene in the middle of the night, would suffice to bombard a commercial or industrial town and to annihilate its riches. And what nation is there, however humble, that has not the means of providing itself with a few 14-centimètres gun-boats? On this point the chances of maritime warfare are again on the eve of being equalised to the advantage of the weaker powers. The day of powerful vessels engaging heavy forts is over; that of small murderous engines attacking the sources whence nations derive their wealth, is about to commence. The invention of autonomous torpedo-boats will for ever do away with the possibility of landing troops on an enemy's territory, which formed so important an element in the wars of other days.

Admiral Aube has already told us how easy it would be, with an ordinary cruiser having a ram, to make a gap in a fleet of transports composed of two lines of ships extending over 8,600 mètres.

But a cruiser with a ram is a very inferior engine of war; after one or two collisions it would be demolished. The invention of

torpedo-boats has made the destruction of a fleet of transports a matter of certainty. Imagine what ruin, what disasters, what losses a fleet of torpedo-boats would inflict, compared with any a cruiser provided with a ram could accomplish, descending at night into the midst of this floating army. Let us go further and imagine the danger avoided, by some providential chance or some unexplained good fortune. The army has disembarked and commenced operations. During this period what becomes of its base which can only be the fleet it came in? It remains exposed day and night to the attacks of the torpedo-boats; sooner or later it must be destroyed by them.

Then the invading army is placed in the same situation as the Egyptian army after Aboukir. It must live on the country and maintain itself by constant victories. But there is only one apparent resemblance between this situation and that of the troops led by Bonaparte and Kleber after the squadron commanded by Brueys was destroyed; for those troops had not much to fear from the Mamelukes, and the army that was to fight them could only come by sea.

What happened in 1870-1871 was totally different. What would have been the fate of General Trochu's expeditionary force, if the original intention had been carried out, of taking it to the shores of the Baltic, 300 miles away from the actual theatre of action, and at such a distance to attempt a campaign which would have had so little influence on the general struggle? Up till the time when the verdict was pronounced at Sedan and Metz, the German army that was especially to oppose General Trochu's, remained ready under the orders of General Falkenstein, superior both in numbers and in possession of all the railways and resources of the country. General Trochu's army would have been surrounded and beaten in the very outset; but if in his flight the sea had not afforded it protection, if the fleet of transports had been destroyed or dispersed, there would have been nothing but capitulation left to him.

Henceforward it is quite evident that the importance of maritime supremacy in a continental war has disappeared. In former days it was a reality, but now it has become an illusion as many other things have done. Fleet actions, blockades, and descents upon the continent will only be recollections of the past. There are now only two methods of warfare; that of pursuit on the open sea, and a coast warfare against undefended towns. The latter is the consequence and natural outcome of the former; and after showing how useless all the others are, we shall be able to demonstrate

how these should be conducted, and what means should be employed to secure the greatest advantage they are capable of producing.

8.

From the preceding pages it will be seen that in future the great law for the navy as well as for political economy will be division of labour. Various vessels and arms, each with their own appointed task to fulfil, will succeed the uniformity of the fighting unit, a uniformity equal to that of the mode of fighting. Each weapon should have its own boat, for it is impossible to do two things well at a time; and if any single vessel is to be a kind of complete arsenal, it will probably end in being unfit for any one of the various operations it might have to undertake. On land the same troops are not expected to execute cavalry charges and to know the work of infantry and artillerymen. Only savage nations have retained such primitive methods of warfare.

Progress has been still slower at sea. Since the invention of ironclads it seemed for a long time to be at a standstill. But the locomotive torpedo and the autonomous torpedo-boat appeared on the scene, and accomplished, or will very soon accomplish, a naval revolution similar to that whereby the land forces have been transformed. Improved arms, the employment of weapons of singular precision and power, will produce, as they have done on land, the triumph of extended order in naval engagements. It will not then be sufficient to *specialize* the means; they must be greatly multiplied so as to produce the greatest effect against the enemy, at the same time giving it the smallest and therefore the most difficult target to hit. Protection will no longer be sought in size and invulnerability, but in speed, and, if we may thus express it, in the fact of never being caught. Armour-plating will disappear and be replaced by number and by small dimensions.

Three methods of destruction exist in the present day, three weapons for the ships—the torpedo, gun, and ram. It would only be logical to construct torpedo-boats, gun-boats, and rams. Unfortunately the latter have to be abandoned because, to work them against large ironclads, the rams would need to be of equal size. These would doubtless have a certain amount of speed, but they would not have the advantage ensured by small dimensions, and, as we have said, these rams, whilst crushing their adversaries, would risk being demolished themselves. We should replace them by torpedo-boats armed with outrigger torpedoes.

These would be rams of a new kind, acting by the shock of their torpedo against the vessel attacked, although themselves uninjured by the shock, for the explosion of the torpedo would not reach them. With floating gun-carriages, 14 *centimètres* gun-boats (as we named them in a preceding chapter) and torpedo-boats further supplied with a ram, which (at a given moment and only in a very extreme case, as this ram as a weapon is very secondary) will enable them to get rid of an enemy of their own pattern, we shall completely realise the division of labour we advocate.

Let us, then, take the 41-mètres 71-tons torpedo-boat, or the 14-cm. gun-boat, with a speed of 20 to 21 knots, to be increased, later on, to 25, and see how they can be disposed for naval warfare. We have supplied the 14-cm. gun-boat with two guns as their maximum, and with as many Hotchkiss besides as it can take. As for the torpedo-boat, it must have two discharging tubes and two torpedoes for each tube. These torpedoes will be 5^m 75 in size, and loaded with 40 *kilograms* of gun-cotton. The projecting stern will protect the discharging tubes in case of collision. At the present date the extremities of these tubes are flush with the stern, which is a very bad arrangement, for they might be injured if their bow struck against a vessel at sea, or a buoy in harbour, a pontoon, or an obstacle of any sort. Beyond these discharging tubes the torpedo-boat should have no other arm on board, neither machine nor machine-guns, nor even rifles. It is an *attacking torpedo-boat*, for the sole purpose of engaging large ships. If armed with a Hotchkiss, as already suggested, the captain would be tempted to fight torpedo-boats belonging to the enemy, and thus neglect the only object he should pursue. We shall be met with the inquiry whether it will be easy for a torpedo-boat belonging to the enemy to stop it? It would, or rather, it might be, if it were sent out alone to do battle. But, side by side with the *attacking torpedo-boat* we should place another, that we might call a *defensive torpedo-boat*, and its mission should be to engage the enemy's torpedo-boats so as to clear the course for its brother-in-arms.

The *defensive torpedo-boat* would have no discharging tube, that is to say, no Whitehead torpedo. The armament would consist of three or four Hotchkiss as powerful as they can be got, and an outrigger torpedo at the end of a spar. This torpedo will be fit to shatter a boom, break through a protecting net, or, if the necessity should arise, it could even blow up a ship. Its Hotchkiss will riddle the enemy's torpedo-boats; its torpedo-ram

will strike and sink them. It will be the best kind of ram, as we have already demonstrated. It will replace the ram that would have satisfied many distinguished men in former days, and which would now be very inferior to a torpedo-boat armed with an outrigger torpedo. For such a reduced and light armament we should probably not require a 41-mètres torpedo-boat; about 86 mètres and 50 tons would probably suffice. As in the case of the attacking torpedo-boat, this one should be able to make 1,400 to 1,800 miles at 10 knots with its ordinary supply of coal.

It would further be advisable that its maximum speed should, if possible, exceed the speed of its linked companion, the attacking torpedo-boat, even should its supply of coal be unable to hold out longer than six days. Its object being the pursuit of the enemy's torpedo-boats, it can never go too fast for that purpose.

Thus, we have two vessels of very nearly similar construction, but of a different armament, one destined to attack by means of the torpedo, the other set apart for defence against torpedo-boats. These two boats will always accompany each other. The number on each attacking torpedo-boat will correspond to the number on the defensive torpedo-boat. They will be, as it were, linked together, two and two, and will never leave each other, the one protecting the other. Each of these couples will form a torpedo fighting unit.

The gun-fighting unit will be the 14-cm. gun-boat. We have already described it at sufficient length, and need not go over the same ground again. But both these torpedo-boats and gun-boats in which everything has been sacrificed to speed, must re-coal after seven or eight days at sea.* They will require dépôts for coals,

* The necessity that torpedo-boats and gun-boats should revictual after a few days' navigation has been the object of innumerable criticisms. One would imagine that ironclads were not liable to the same thing. Now, our last ironclad, the *Admiral Duperré*, can only take 700 tons of coal on board. At a speed of 12 knots this splendid ship consumes 100 tons of coal a day; she therefore carries coal in her bunkers for only seven days at 12 knots. Then why talk, in the face of this, about the re-coaling necessary for torpedo-boats, re-coaling that can be done in a few hours. The *Duperré* is less *autonomous* than a torpedo-boat. How can it scour the seas? Of what use can it be, unless as a coastguard remaining constantly within reach of a coaling dépôt. It would not be easy to convey coals to it, for it is not so easy to ship 700 tons of coal as the few bags necessary to a torpedo-boat; and this is the vessel that is supposed to secure the "empire of the seas." Fully aware of its superior speed, and secure in the knowledge that, if the ironclad were foolish enough to give chase its bunkers would soon be empty, any ordinary steamer might amuse itself by hoisting hostile colours in its sight, on the open sea, and could moreover, run a blockade with much greater chance of success than the ironclad. If the *Duperré* starts at 14 knots, its maximum speed, it could not maintain the pace for many hours, and its consumption of coal would be increased by half as much again. These are the ironclads that are to be cruisers—perfect tortoises, unprotected by their shells, and obliged to steam at 6 knots to save their coal!

stores, and reserve men. In our basin of the Mediterranean, between France and Algiers, nothing would be easier; there would be no lack of ports. There may be now in far-off seas, but they must be made. They are a necessity for all flying squadrons.

Although M. Gougeard approves of vessels of considerable tonnage, he claims a fleet of transports to come to their assistance. Our small boats must submit to the same law. They too, in long cruises, must be escorted by transports. For the latter purpose we should choose the type of steamer employed by the great English and French companies. These already attain considerable speed, but at the outset we should bring it up to at least sixteen or seventeen knots. They must be constructed with a great number of water-tight compartments, to diminish the chance of being sunk. They would only take advantage of their speed to keep up with the gun-boats when they gave chase to merchant-ships, and to fly with all speed from the enemy, under the protection of these same gun-boats, if they are attacked. It will therefore be sufficient to arm them with a certain number of 14-cm. guns and Hotchkiss, permitting them to fight only if there be any absolute necessity. But as a general rule they will not defend themselves, they will merely be the base for supplies, the convoy for the small boats, and remain as much as possible away from the fighting. They might even, if so arranged, remain at given points, where it would be easy to rejoin them at a certain distance from the mercantile routes scoured by the gun-boats and torpedo-boats. These transports would carry stores and ammunition. They should be the parent ships, and able to furnish food for two or three months, and coal for at least thirty days. They should, further, most decidedly have a workshop on board, as well organized as possible, for locomotive torpedoes, with spare gear.

They must naturally be able to provide for their own requirements, whether for two or for three months. Each of these transports, according to its tonnage, could provide for a greater or less number of torpedo-boats and gun-boats. We will take for model a transport of the same pattern as the *Mytho*; a transport of this kind could supply the needs of 4 gun-boats, 8 attacking torpedo-boats, and 8 defensive torpedo-boats. Each gun-boat would have a crew of 45 to 50 men, each attacking torpedo-boat a crew of 14 men, each defensive torpedo-boat 18 men; this, for the 20 boats, would form a maximum of 460 men. As many would be on the transports, and would from time to time exchange with the crews of the small vessels; for although the latter are far less uncomfortable than is sometimes asserted, it is not easy to con-

tinue on them for entire months without a rest. In the course of a long cruise, officers and men could alternate in this service. By this means the discomforts would be lessened, and no one would have any serious cause of complaint.

It only remains for us to demonstrate that a fleet thus constituted would fulfil all the needs of a naval war present or future. As far as pursuit is concerned the thing is evident. Our transports, escorted by their satellites, extending their action to a large circle, will be admirable instruments for a war of chase. Each little vessel will be a sort of feeler spreading itself out on the sea in pursuit of merchant-ships. We have furthermore the steamers belonging to our mercantile companies, which would be freighted for the use of our gunboats and torpedo-boats, which could, according to need, be sent alone in pursuit of the enemy. A great number of them are already commanded by lieutenants perfectly acquainted with and accustomed to handling them, and who could any day take the command in a campaign.

As a war of chase is the most important item in maritime warfare, as it is the means whereby the enemy may be most effectually reached, and as this must, above all other things, be held well in view in preparing for future wars, we think it necessary further to devote a special and independent instrument to its service, devoted entirely to bringing out all its points. We therefore propose the construction of cruisers capable of acting alone and without other help or protection than their speed.

The transports, gun-boats, and torpedo-boats will be the vultures circling in flights in pursuit of their prey. The rapid cruisers will roam in solitude like the hawk in search of quarry. The pattern to be adopted for these cruisers has been much discussed in every country. England appears to be about to draw the line at ships with limited protection, of the *Esmeralda* pattern, and France at patterns similar to the *Sfax*, or M. Gougeard's vessel.

In our opinion all armour-plating, whether for our cruisers or other vessels, should be firmly suppressed. The purpose is not to construct fighting units for war, but simple sea-rovers, only to attack the weak and those unable to defend themselves. It is useless to give them heavy guns. We should be satisfied with two 14-cm. guns, as on our gun-boats, one forward, the other either aft or nearly amidships, with as many Hotchkiss as possible; and, finally, as supreme protection, two tubes with locomotive torpedoes, likewise placed one forward and the other aft.

These cruisers, on the high seas, should sacrifice everything to speed; which is alike indispensable in escaping from a formidable

adversary and in sudden descents upon a disarmed foe. They must steam at least 20 knots at full speed. In many respects they will resemble the pattern proposed by M. Gougeard, with the essential difference that, being rovers on the maritime highways, and not men-of-war, the armoured deck of the latter will be replaced by an equivalent weight of coal in the former. In this way their sphere of action and of destruction will be extended. They will hardly require to go into port for repairs. They must revictual from the vessels they have captured, and relentlessly sink the merchant-vessels the moment they have taken their stores and coal, so as not to encumber themselves. They must land the crews of the captured vessels on the nearest friendly shore. They must beware of running willingly into any danger. If torpedo-boats and gun-boats attack them, they must seek safety in flight; and never, on any account, must they attempt to approach shore batteries, for these might inflict the most serious damage on them. They must limit themselves to pursuit on the open sea and to forcing blockades.

These vessels will be our blockade runners and our *Alabamas*, but *Alabamas* that will, on no account, repeat the folly of their celebrated model by accepting battle. They will probably cost more than two million francs each. The great ocean lines are, as we have already observed, not more than ten in number, and our cruisers must limit themselves to these.

The existing squadrons must still be fought, as they will probably continue a few years longer in existence. We are about to prove that our transports, gun-boats, and torpedo-boats will suffice for this purpose.

In order to give more precision to our ideas, we will classify our vessels in groups, which we shall name *fighting groups*, each to be composed of two gun-boats, four attacking torpedo-boats, and four defensive torpedo-boats. It seems to us that a group thus constituted would combine sufficient strength to overcome any ironclad or big vessel. Let us suppose a hostile squadron, made up of ironclads, torpedo-boats, and look-out ships. The moment it is seen, our torpedo-boats and gun-boats, profiting by their speed, will surround it on every side.* The gun-boats and defensive

* It has been argued that an ironclad could not be thus surrounded by torpedo-boats giving chase; and the reason given is, that the moment they were observed, the ironclad would go off at full speed to avoid their attack. Allowing that an ironclad having sighted a torpedo-boat six miles off, should take to flight and start off at a speed of fourteen miles with the enemy in full pursuit; in five hours she will have made seventy miles; in the same amount of time the torpedo-boat, going sixteen knots, would make eighty miles; but as the ironclad had a start of six miles,

torpedo-boats will lead the way, attacking the look-out ships and hostile torpedo-boats, and clearing the way for the attacking torpedo-boats, which will be close behind them; they will do the utmost possible harm, and they will make as much smoke as possible so as to conceal their companions in the fight. If they succeed in making the gap through the light vessels of the advanced guard which is more than likely, the attacking torpedoes will not proceed at their maximum of speed till the ironclads, firing their big guns, are surrounded by that cloud of smoke which invariably masks their view after the first round; then nothing will stop them; if they can only muster in force, success is certain.

In every fighting group the torpedo-boats will act in accord and simultaneously attack the ironclad they may have picked out; and of four torpedo-boats attacking her from ahead, from astern, and from either beam, at least one must succeed, even in full daylight, as they will have the help of her own dense smoke. The only difficulty is to break through the lines of the advanced guard. The issue of battle will depend on this first attack. To succeed, the fighting groups will have to take various formations, according to circumstances. There is, doubtless, a system of tactics needed in this. It is being studied in foreign navies. France has hitherto neglected it. She is said to be going to consider it. But it is quite time to begin!

We may, however, at once set forth the principles on which this system must be based. There are three of them: 1st, speed; 2nd, number; and 3rd, invulnerability; to be obtained for the instruments of warfare by small size and rapidity in evolution.

Large torpedo-boats, large gun-boats, and still larger vessels carrying both guns and torpedoes have been already suggested. An attempt has been made to armour-plate them for the protection of their machinery. All these errors prove that we have not taken into account the real nature of the new instrument of maritime warfare,

The merit of these fighting groups we have just formed is to obtain the advantage that men, extended as skirmishers, possess over a body in close column. They fight in long lines sufficiently apart from each other for projectiles to pass between them, generally without hitting them; they are sufficiently mobile and

they could only head it by four miles ($80-6=74$). The ironclad would, therefore, be outstripped in five hours; also we have supposed the ironclad to start at a speed of fourteen knots, whereas she would need at least half an hour to do so, if her fires were not all lit. The torpedo-boat increases its speed in five minutes. The operation is always slow for the ironclad.

sufficiently numerous to surround the enemy. In an attack such as we have imagined their first line may be partially or entirely destroyed, but it will no sooner be reached than the second will advance, without giving time to the squadron attacked to reload its guns and continue firing. Moreover, a sort of general *mêlée* will succeed to the assault on the ships of the advanced guard, the protectors of the squadron. Such of these as are not injured will turn round on seeing themselves left behind, and will go in pursuit of the assailant. In the midst of all these combined little vessels, confused and mixed up together, how should the ironclads distinguish their own so as only to fire on those belonging to the enemy? And hitherto we have only spoken of action by day, which ought to be and can be carefully avoided so as to economise resources. But at night the chances of the assailant will be still greater. The defending torpedo-boats will disperse their adversaries, whilst the gun-boats fire on the electric lights of the squadron, and thus take away all means of resistance. Then the attacking torpedo-boats will do their work without difficulty. They will not even run any very great danger. The only protection that must be afforded to them will be in their small dimensions and their speed. This is generally sufficient to save them, and economical as well.

That small boats are less expensive than big ones is a truth laid down by M. de la Palisse. Now, the cheaper a boat is, so much the easier is it to multiply patterns of it, and, furthermore, the greater the number the greater the chance of success will be where number is all-important. We will not insist on actions against squadrons, for, if any doubt remains on the issue of these encounters in full daylight, none remains as to their issue by night.

We may lay down as a principle, as Admiral Aube has done, that any squadron attacked at night by a flotilla of linked torpedo-boats and gun-boats is virtually a "flotilla destroyed."

Those who are most convinced of this truth still have reservations as to operations on the coast. Small boats, they say, can never besiege a stronghold, or bombard Gibraltar and Malta. Heaven forbid that we should deny this. But we assert that those who think they can be bombarded by ironclads, or coast defence ironclads, are the victims of an entire delusion, and are quite wrong in attempting to retain such heavy vessels for this purpose when they have already repudiated them for naval engagements.

In a former chapter we have cited the case of Alexandria. Now, Alexandria is neither Malta, nor Gibraltar, nor Aden. Its fortifications are almost worthless; their only protection lies in their

formidable guns, but these were served, in the struggle against the English, by most inefficient gunners. Even the English naval critics admit that, if these gunners had been German or French, a third of the besieging squadron would have been sunk or disabled.

Now, if we calculate what the third of an ironclad squadron costs, and what it represents in military value, we may then ask ourselves what nation would be sufficiently mad or foolish to risk such a loss at the beginning of a war, with no other advantage to be gained than to take possession of the fortifications, or, rather, to reduce those fortifications, which could be so easily got round, to silence? We have surely proved that naval strongholds have ceased to be of the importance attributed to them in former days. Malta and Gibraltar are always excellent harbours for re-coaling, but now-a-days no sailor would venture to maintain that they are still the "keys of the Mediterranean."

There are no "keys of the Mediterranean" now, all its ports are open. Our small boats, our gun-boats, our rapid cruisers, our transports, would none of them hesitate to go through the Straits of Gibraltar at full speed, in the night, without fear of the English guns. Could anyone seriously believe that the guns of Malta would interfere with the freedom of the Suez Canal? For a squadron to attack either Malta or Gibraltar would, therefore, be almost as useless as it would be foolhardy. But what would be still more foolhardy, and even absurd, would be to attack them by means of ironclads.

(To be continued.)

Waiting on Providence.

A TALE OF THE INDIAN OCEAN.

By Captain S. PASFIELD OLIVER.

A CHARACTERISTIC incident, exemplifying the adventurous life led by some of the old slaving captains of the Indian Ocean in by-gone days, used to be related in the island of Réunion, or, rather, île Bourbon, as the older colonists still prefer to call it, a good many years ago; and the story, with but slight variations, is well known in Mauritius, and, indeed, was popular throughout the Mascarene group.

The chief actor was the captain of a colonial-built coaster belonging to St. Paul, the sole roadstead in the island of Bourbon, where the surf does not beat with incessant violence throughout the year, as it does elsewhere on those inhospitable volcanic rocks and stupendous cliffs, which render landing at all seasons so dangerous a risk that few care to undertake it, except on urgent business. This captain, by name Crémazy, whose family is yet represented at St. Denis, was a regular old sea-dog, of the type portrayed by Victor Hugo in the character of Mess Lethierry, of *Les Travailleurs de la Mer*.* A Créole blanc, i.e. born in the island of European parents, he was a brave, intelligent sailor and trader, owner and commander of *Le Télémaque*, a brigantine of some 150 tons burden; whilst, at the time that the adventure now to be related happened, he was in the prime of life and engaged in, what was euphemistically termed, recruiting labourers for the sugar

* "Mess Lethierry, l'homme notable de Saint Sampson, était un matelot terrible. Il avait beaucoup navigué. Il avait été mousse, voilier, gabier, timonier, contre-maître, maître d'équipage, pilote, patron. . . . Il était intrépide aux sauvetages. . . . On le voyait de loin dans la rafale, debout sur l'embarcation, ruisselant de pluie, mêté aux éclairs, avec la face d'un lion qui aurait une crinière d'écume."—*Les Travailleurs de la Mer*, Liv. 2nd, p. 21. Original edition.

plantations in the colony from the eastern ports of Africa, and both coasts of the Mozambique channel.

At the period spoken of, anterior to 1845, the enfranchisement of domestic slaves in Bourbon had not yet been carried out; but, nevertheless, the slave trade was prohibited, and the British cruisers had the right of searching suspected vessels; consequently Captain Crémazy had to be wary and cautious in his dealings with the traffic of the so-called free and voluntary labourers.

It would be out of place here to discuss the difference between the ideal legal free black labour and the black labour of fact. It may be sufficient to state that black labourers could be obtained on the coast for from five to ten dollars, and that their market value in Réunion was from fifty to sixty pounds!! Hence a fortunate trader could realise a handsome profit if all went well.

Before commencing his benevolent and profitable operations in the Mozambique, M. Crémazy, with a frugal intent, prudently determined to touch, *en route*, at one of the numerous groups of small islands which stud the Indian Ocean north of Madagascar, in order to lay in a supply of coco-nuts and young seedling cocons (*cocos-germés*), as the most economical method of provisioning his future cargo of negroes almost free of cost. Running before the south-east trade wind, and with the favourable assistance of the great equatorial currents, it is a very short passage from the Mascarene Islands to the east coast of Africa, but the return voyage against wind and stream is tedious, and often prolonged. Under such circumstances the commissariat department of vessels engaged in transporting the dusky recruits oftentimes fell to a low ebb, and then the dark-coloured freight suffered to such an extent that, at times, part would be jettisoned in order to save the remainder, as mere skeletons and bags of bones did not command a fair market value at the port of destination.

Desirous of avoiding the inquisitive notice of any British men-of-war in East African waters, Captain Crémazy had fixed upon the small island, named Providence, which was seldom visited except by the turtle-fishers from the Comoros, and which, being surrounded with many unsurveyed reefs and banks, was avoided by large East Indiamen in both their outward and homeward track.

In fact, this island, with the islets and reefs in connection with it, were only discovered by the French frigate *L'Heureuse* being lost upon the group during the night of September 6th, 1763. On that occurrence the wrecked crew escaped to a sandy islet, the *île du Cerf*, at the southern extremity of the reef, whence they subse-

quently succeeded in reaching the larger island at the northern end which they named Providence.* Here they are said to have remained upwards of two months before they escaped in a canoe, which they had lengthened, which, favoured by a N.E. breeze, finally landed them, after four days at sea, to the south of Cape Amber in Madagascar.

Another reason why Captain Crémazy desired to load his vessel at Providence was that, in company with all the outlying islands of the Archipelagoes of the Indian Ocean, it was a dependency of the British island Mauritius; he would, therefore, have the gratification of invading a British possession, and enriching himself at the expense of the British colony; thus his frugality and patriotism would equally be served by this predatory visit to the lonely isle *en passant*.

Fifty years ago, when Louis Philippe was King, the means of navigation were by no means of a high standard, and the accessories on board colonial vessels were of a primitive description. Consequently the brigantine from St. Paul de la Réunion was but ill-found in her stores and equipment. In those days chain-cables had not replaced the hempen hawsers and cordage of the period, and the cable of the *Télémaque* was composed of twisted coir or *bastain* (the hairy fibre of the palm tree so common in Celebes, where it is known as the *goumoutou*), and as then cables were apt to get easily severed against the sharply jagged edges of the coral reefs and rocks at the bottom of the Indian and African ports, in order not to lose a valuable anchor it was customary to bend on, what the Créole sailors term a *pégase*, which consists merely of a rude wooden cage, or crate, filled with stones.

Within three or four days of leaving St. Paul, the good ship *Télémaque* entered inside the reef of Providence, about half a mile from the shore; the *pégase* was duly let go, and the brigantine rode, in apparent security, in the appointed haven—*unco non alligat ancora morsu*. Captain Crémazy, with a light heart, at once went on shore to examine the island, which he had never previously visited, and to reconnoitre its resources, estimate the crop of cocos, and arrange the work for his crew on the following day. Landing alone on the uninhabited island, the Captain sent back his boat to the ship with orders for the crew to send off for him in an hour's time, during which the men were to prepare and

* *Renseignements nautiques sur quelques îles éparses de l'Océan Indien Sud.* Par M. A. le Gras. Dépôt des cartes et plans de la Marine, Paris, 1879. *Carte des îles situées à l'Est et au N.E. de Madagascar*, publiée 1838. According to the Admiralty chart, the island of Providence is in lat 9° 14' S. and long. 51° 10' 30" E.

get their afternoon meal, whilst he took a walk along the beach and through the groves of cocons.

After fully satisfying his curiosity, and finding ample provision for the morrow's working-parties in collecting the nuts and young plants, Captain Crémazy leisurely retraced his steps under the palms to the sandy cove where he had landed; when to his dismay he beheld the *Télémaque* adrift, outside the reef, and in the full stream of the violent equatorial current which sweeps turbulently past to the westward, with a rate, oft-times, of six knots.

It was a spring tide, and, as the water rose quickly over the reef, the vessel swinging suddenly, the twisted coir chafed against the coral blocks in the anchorage had given way, and whilst the crew were busy cooking, eating, and sleeping, with true Créole carelessness, the *Télémaque* quietly slipped away from her moorings, and, before the sailors could notice the mishap, she was outside the reef and swept away to the open sea.

It was late in the afternoon when the breeze dropped, and in vain did the mate set sail in order to regain the anchorage. There was hardly a breath of air to fill the sails, far less to stem the current. She drifted away in the gloom, and the last dip of the vanishing sail brought a choice and remarkable selection of idiomatic Créole language to the lips of the abandoned skipper, left alone lamenting on the solitary beach of Providence.

The hardened mariner, however, was by no means seriously alarmed; and after the first ebullition of temper at losing his evening's meal and smoke, his bed and snug quarters on board his ship, he accepted the situation with philosophical mind, and turned his attention to making himself comfortable for the night. He had been accustomed, as has been remarked, to rough it, and he fully expected to find his vessel regain her anchorage the following day.

He had come on shore just as he had stood on deck, clad merely in white-duck trousers and a shirt of *toile bleu*, with a *machete* or bill-hook in his hand by way of a ready weapon. He was not, therefore, too well defended against wind and weather; but within ten degrees of the equator at the sea-level during ordinary seasons the climate is warm enough, even at night, to cause no anxiety on the score of clothing. Here, indeed, the limbs of the late Victor Hugo are fully realised:—

L'été, la nuit bleue et profonde.

S'accouple au jour limpide et clair.

Captain Crémazy soon arranged a tolerably comfortable shelter and couch for himself with palm leaves, and, making his supper off

the kernel and milk of the green coco-nuts, sought refuge in sleep. He passed a restless night, however, for he could not help having some misgivings—*per noctem plurima volvens*. His mate and crew were not skilled in navigation and knew not the art of reckoning longitude, although they were handy enough at managing their vessel. Moreover, both rats and mosquitoes were annoying, and the earliest daylight found our adventurer impatiently pacing up and down the wave-worn shore before the purpling ocean owned the coming sun. Nothing in sight. The sun rose quickly, dissipating the morning fogs from the horizon to the west; but, although the atmosphere was cleared, no sign of a sail appeared. The discontented castaway threw himself on his back and gazed in the air with great perplexity; and, indeed, we can pretty well imagine that his reflections were not of the most pleasant description. However, not being a *père de famille*, no sad visions of a bereaved wife and child were there to vex his spirit; on the contrary, far more practical schemes for the supplying his immediate wants engaged his attention. Supper off cocos and breakfast off cocos were not very great hardships for once in the way. There was no want of such means of human sustenance; indeed, he had fully intended to feed his cargo of Africans on such-like food during their prolonged transit to the hospitable land of promise in Réunion; but variety is charming, and our Créole's taste for more savoury viands was advanced. Man is a cooking animal, and M. Crémazy was no mean *cuisinier*, had he only the wherewithal on which to exercise his skill. He had observed, during his promenade the previous day, some *chou-chou*, a species of wild cucumber and calabasses, which vegetables are poor enough, perhaps, raw, but when cooked make a delicious delicacy in the Créole menu. To cook, it is necessary to have fire; but Captain Crémazy had left the *Télémaque* without even his flint and steel. Had our adventurer been a savage, he would have had no difficulty in obtaining a fire by rubbing two pieces of wood together—a hard against a softer. He had often seen the Malagasy and negro slaves obtain fire in this way, but had never practised personally this primeval art. Now he determined to make the attempt. He had reverted to the savage state, and had recourse to the apparently simple act of uncivilised man. He selected with care the two pieces of wood necessary for his experiment, of different density. Of the lighter he made a sizeable block from the outer husk which serves as a bark to the coco palm, making a small hole in its centre; whilst from the harder trunk of a fig tree (*cassuarina*) he cut a fire-stick, which he strove to revolve as rapidly as possible between his

hands; but in vain he laboured the greater part of the day, between the intervals of gazing seawards for the missing ship. His hands were sore and his arms ached with his futile endeavours to produce fire with the natural means at his command. He now fully appreciated the fact that of all the creatures under the wild expanse of heaven, man, or rather civilised man, is the most helpless and despondent imaginable. The most abject bushman or untutored negro* could have speedily obtained the much wished-for spark, which he, Créole islander and skilled navigator, failed in kindling. He began to appreciate the negro capabilities more fully, and mentally appraised his next cargo of ebony at a higher value.

Thus the first day passed away; his hunger and thirst were, perforce, appeased with cocons and raw cucumber, until evening again descended violet and soft. The brief twilight gave place to the bright gloom of the tropics, as he watched expectantly across the glittering sea-line listening to the thunder of the surf on the surrounding reef-barrier. But no sail hove in sight; nor, with the light winds and calms which prevailed, was there the slightest chance of the *Télémaque* making her appearance.

Another night passed with the usual accompaniment of mosquitoes, rats, land-crabs, and sand-flies, those abominations of all sea-beaches in the torrid zone. The enforced solitude seemed unendurable without the solace of fire and pipe.

The next morning broke like the preceding—no sail. Again did the exile set to work with redoubled vigour to obtain fire, and for long he was unsuccessful; but perseverance is part of the Créole character, and after a time he was encouraged by perceiving the softer wood to show faint signs of charring. He increased his energies till actual smoke issued from the point of contact between the pieces of wood; and thereupon he carefully placed dry fibres and morsels of grass over the spot, and resumed his strenuous labours, until he had the intense satisfaction, towards evening, of kindling a spark which caught, by contact, the fibre. Carefully blowing the tiny scintillation till it glowed and illuminated the smoke, a flash blazed up, and he uttered a cry of joy when the flame burnt brightly from the incandescent wood. The triumph of Prometheus was complete, and at this moment the sailor was a Guebre, a true fire-worshipper. He speedily gathered some larger branches, wherewith he built a regular bonfire, and then cut some

* It would seem, however, that the Andamanese, like the quondam aborigines of Tasmania, have always been ignorant of the art of producing fire.—See E. H. Man, *On the Aboriginal Inhabitants of the Andaman Islands*.

larger faggots so as to preserve the fire through the night. The exertions of two days were at last rewarded, and he sat before his newly-acquired companion in the dark, and kept awake half the night, admiring the cheerful blaze which kept off the rats, and the smoke which drove away the devouring mosquitoes and sand-flies. He cooked his cucumbers in the embers, and supped and slumbered peacefully.

His slumbers did not last long, for he was awakened by a singular noise—he knew not what it could be—and started up shuddering; it seemed that something or somebody was moving stealthily towards him. He listened attentively, and, peering through the darkness, made out soon the form of a turtle which had come ashore to disinter her eggs, and take out the miniature reptiles within awaiting their release. Such is the instinct of these remarkable creatures, that they deposit their leathery eggs in the sand just above the extreme limit of high-water spring-tides, in a warm spot where the rays of the sun have their greatest power; and exactly fifty days afterwards—the period of incubation is known so accurately by their inherited maternal instincts—neither more nor less, the turtles again revisit the well-known locality and proceed to dig out their eggs. Immediately the hot layer of sand is removed, and the eggs thus relieved of their superincumbent weight, the embryo turtles break their shells* and follow their parent, who precedes them into the sea. Directly they are afloat, they attach themselves fast to the under shell or plastron of their mother, and are borne away to the deep-sea depths.

Captain Crémazy was speedily wide awake to this providential windfall, or rather *jetsam*, thus cast by the ocean into his power, and softly approaching the animal and seizing its flippers, with some exertion he succeeded in turning it on its back, where it lay powerless, whilst he watched it till daylight, when with his *machete* he killed it. It was a splendid animal, in good condition, its flesh when cooked excellent: and, preserving the fat, he ingeniously filled the egg-shells of the young turtles with it, inserting twisted fibre by way of wicks, thus extemporizing some fairly serviceable night-lights. Salt was easily obtainable in the hollows of the rocks when the sea-water had evaporated, and the carapace of the turtle served as a first-rate stew-pot, whilst the plates of the plastron

* Here the young turtle crawling from his shell,
Steals to the deep wherein his parents dwell;
Chipped by the beam, a nursling of the day,
But hatch'd for ocean by the fostering ray.

(Lord Byron, *The Island*, canto iv.), 1828.

were made to do duty for frying. The coco-nut milk soon became distasteful to the sailor, who another day scooped out a shallow well in the sand, from whence he was able to procure palatable water in sufficient quantity not only to drink but with which to wash his linen clothes, which, as before remarked, were scanty in the extreme. Curiously enough, although alone on an uninhabited island, the chronicler relates that such was the modesty of this rough man that he would never divest himself entirely of his clothes even for the shortest space of time; thus he would wash his shirt keeping his trousers on, and in like manner not remove his *pantaloons* until his shirt was dry enough to put on in turn.

He was able now to construct a more desirable shelter with a lean-to roof of branches and leaves, with his couch, beneath which he kept free from the rats and such like vermin by burning the grass and rubbish and clearing the ground from weeds round about, whilst he also built a fence to enclose his rude abode.

During his rambles he had noticed quantities of ground-doves (*tourterelles du pays*—*Columba striata*), which were tame enough, so that he easily captured them alive, or knocked them over with sticks, and thus obtained an additional dish for his cuisine. In order to roast them, he suspended these birds by a thread of coco-fibre, which he twirled before the glowing embers, and he stated them to be plump, tender, and exquisite morsels.

Around the south of the island there extend banks and coral reefs for more than twenty miles; these are covered and left half-dry alternately by each tide twice in the twenty-four hours. At low water the retreating waves leave an innumerable and diversified multitude of fish in the pools among the coral banks, which literally teem with all sorts of varieties of pelagic fauna and flora. These riches of the deep thus exposed to the fisherman include mullet and delicious rock-fish, eels of all sizes from the formidable conger to the vicious tazarre (*muraena*), crabs, and cray-fish, with other little known crustaceæ, echini or sea-urchins, holothurias, sponges, medusæ and jelly-fish of sorts, actinias, huge cat-fish, cuttle-fish (*octopus*) and sepias, ourites, large edible clams and oysters. Such-like curious and plentiful food was easily obtainable without trouble, and afforded the solitary inhabitant of Providence sport and recreation. Every day he would wander out, wading over the banks to search the tidal reservoirs for select fish, which he did not neglect to dry and lay by against future needs.

Nevertheless, that which, above all, preoccupied the mind of this solitary human being during his enforced seclusion from the outer

world was the chance of escaping from his island prison. Every morning he passed long hours on the beach near the spot where he had last seen his beloved *Télémaque* disappear under the horizon, and a thousand dismal apprehensions arose in his mind continually. Sometimes he would imaginé that his comrades had been shipwrecked on some unknown bank of that dangerous archipelago, whose waters had been but insufficiently surveyed at that date; at other times he would fancy that his mate and sailors had proved faithless, and deserted him for good and all.

The ready means of preserving his life and physical strength being now ensured, the next care of the castaway was to be prepared to call the attention of any ships which might haply pass that way within sight of his island. For this purpose Captain Crémazy spent a great deal of time and labour in gathering together quantities of inflammable material with which to construct a huge beacon. A mass of dried leaves and the spicules of the filao beneath was covered in with the larger petioles of the coco fronds, and next the thicker midribs and branches of casuarinas piled on, overtopped with many a fallen log and trunks of palms felled by the wind, and with baulks of drift timber washed up by the sea. This huge pyre was kept in readiness to set a light to whenever he should perceive a vessel in the offing, as a signal of distress well known to and understood by all mariners who traverse those stupendous oceanic areas studded with innumerable desolate islands. This accomplished, every evening, as well as morning, when the horizon was distinct, the lone watcher gazed seaward with alternate hope and despair. Thus days succeeded days.

A shipwrecked sailor, waiting for a sail :
No sail from day to day, but every day
The sunrise broken into scarlet shafts
Among the palms and ferns and precipices ;
The blaze upon the waters to the east ;
The blaze upon his island overhead ;
The blaze upon the waters to the west ;
Then the great stars that globed themselves in Heaven,
The hollower-bellowing ocean, and again
The scarlet shafts of sunrise—but no sail.

(*Enoch Arden*, Tennyson.)

As time passed away, and the Créole captain strained his eyes in vain with watching, his solitude appeared to him to grow more and more profound. One of his distractions of an evening, as he afterwards related, was to amuse himself by observing the manoeuvres of the predatory frigate birds (*Atagen aquila*), who systematically pursued and exacted black mail from the gulls, terns, noddies, and kittiwakes which frequented the island of an evening, their

breeding and nesting resort. By a secret instinct of impending danger, these *alouettes de mer* would look well round on approaching the land to see whether any frigate-bird or other marauder was in sight, soaring above in the tropical sky. Carrying in their beaks their evening's pittance, and the delicate morsels of fish reserved for their callow young, which they have picked and chosen in their day's fishing excursion on the edge of the extensive reefs, they make their homeward approach with diffidence, as if they were running a blockade—as, indeed, they do.

Not desecrating their dreaded enemy in the air, they cease their flight as they near their island roosts, and skim along the surface of the broken surf, or swim on the surface of the rollers and amidst the spray of the waves, so as to practically identify their white bodies with the white froth and foam along the coast. On reaching the sand or coral beach they scurry along towards their retreat among the palms, but, as they cross the open space along the natural and exposed glacis, their enemy, who has been lying in ambush, cuts off many a straggler. The frigate-bird dashes on the helpless victim, strikes the unfortunate tern or gull until it disgorges its dainty supper, which it seizes and makes off with to enjoy at leisure. Meantime, the despoiled gulls utter piercing cries of distress as they fly back disconsolately to their broods destined to go supperless. Then ensues a scene of desolation and grief, whilst the confused cries are only cut short by the darkness, or by some more fortunate neighbour throwing out of its nest the surplus fish of its evening meal, thus affording some consolation to the bereaved families. "The world of birds," moralised the unsentimental Captain, "is not, after all, a bad reflection of society in Réunion." Réunion was his world; St. Denis was to him the hub of the universe.

After some days, the mind of the Captain was considerably exercised by the frayed state of his two sole garments. How was he to cover his nakedness when his only shirt was rapidly being reduced to shreds, and his pantaloons in rags and tatters? This was the next problem, which was solved by his cleverly weaving a rough sort of tissue, or mat, with the ubiquitous palm-fibre, using the mid-rib of the stiff palm-branches, which he shaped and polished like a shuttle. It was certainly not an elaborate garment which he thus manufactured, but it was preferable to the traditional aprons of the garden of Eden, and served to preserve his skin from the scorching solar rays by day and the keener temperature by night. He admired prodigiously this new product of his industry, and his spirits were raised to a certain degree of cheerfulness as he

experienced the satisfaction of donning his new home-made suit of clothes, his own patented handiwork.* He next proceeded to manufacture some sandals for his feet out of the outer rind of the palm-stems, and, as the days passed without succour, he set systematically to explore the island in detail. He found that his domain (British Colonial soil) was only about two miles long, and not more than half a mile across, and but partially covered with coco-palms on the windward side. The equatorial current from the east, and the prevailing south-east trade-winds, had carried hither the floating coco-nuts, which had germinated, taken root, and propagated fruitfully, extending inland from the sea-shore, until, in a succession of ages, they had formed a veritable forest. These coco-palms, with their slender white stems, are of all heights up to 60, or even 80 feet, often gracefully curved, bending or bent with the wind at all angles of curvature, and adorned with a bushy crown of feathery leaves. Each palm bears yearly from 80 to 100 nuts, which yield, in all, from eight to ten quarts of oil.

The leeward side at the present day, as then, is a plain of sand sparsely covered with stunted bushes and a scanty vegetation composed of various salt-loving plants, coarse tufts of grass, and creepers. Here tracts of soft level sand alternate with upheaved coral blocks, and hillocks picturesquely clothed with *ipomœa maritima* and other convolvuli. The charm of the coco-groves is enhanced by this desolate tract, and endless variety of groups of the palms prevents the spectator from feeling the monotony of the scene, although, with the exception of some casuarina and dwarf pandanus, there are no trees except the palms of all ages and sizes, which afford a grateful shade from the vertical rays of the sun, although of not much use when the sun is lower in the sky. One evening, when returning pensively to his shed, walking along the edge of the beach, and gathering shell-fish for his supper, the islander suddenly fancied he could distinguish faintly on the horizon the sail of a vessel. It was near sunset, and the warm atmosphere was fantastically illuminated with ever-changing kaleidoscopic rays and tints among the shifting clouds along the horizon on which he

* But then a sort of kerchief round his head,
Not over-tightly bound, nor nicely spread;
And 'stead of trowsers (ah, too early torn!
For even the mildest woods will have their thorn),
A curious sort of somewhat scanty mat
Now served for inexpressibles and hat;
His naked feet and neck, and sun-burnt face,
Perchance might suit alike with either race.

(Lord Byron, *The Island*.)

fixed his gaze so intently. Was it in truth a sail? The clouds had so often assumed such an appearance to his deceived eyes. The breeze shifted the distant clouds, but this one dark spot preserved its unchanging aspect. Its solidity and reality were certain. He doubted no longer, it was a sail. It was a supreme moment of hope, fear, and doubt, with which his heart beat tumultuously. Was it his own ship, or only a stranger passing by chance in this unusual direction? Should he light his signal-fire, at the risk of consuming in vain the result of such great labour? Meantime, the tiny distant object gradually but steadily increased in size as its distance diminished, for now a favouring north-west breeze sprang up as the trade-wind disappeared with the sun. As soon as darkness set in, Captain Crémazy decided to set fire to his pile, and, applying his brand, an immense pyramidal flame shot up towards the sky. It was evident that those on board saw and appeared to understand the fiery signal, for a lamp was hoisted to the mast-head, and the sail slowly approached the entrance to the reef. It was the *Télémaque* herself. Within another hour she was at the anchorage, and, to the intense joy of the Captain, the sound of the *pégase* and cable let go made known to him that he was saved. In another quarter of an hour the boat reached the shore, and his *cher* Adolphe, his *fidus* Achates, was in his arms, embracing as only Créoles embrace, and all the troubles and vexations of Captain Crémazy were things of the past and forgotten in the moment of release.

Carried away by the strength of the current, and being unmanned, the second mate had been totally unable to make the island again, and, being without provisions for a prolonged voyage, he could not venture to beat up against the prevailing trades, but had to follow the current-stream to Angazicha or Great Comoro, where the Sultan of Maroni (who has lately, by-the-bye, contracted a treaty with France*) supplied him with fresh provisions wherewith to again attempt to beat against the wind to Providence, a distance of several hundred miles, in the teeth of strong gales and the adverse current.

The following day, before bidding farewell to the place of his exile, M. Crémazy wrote a brief account of his thirty-two days involuntary sojourn on the island, and placed the record in a bottle, which he suspended on the most conspicuous tree in the vicinity of

* Since writing the above, the Protectorate of the Comoros (viz. Anjouan or Johanna, Mohilla or Moheli, and Angazicha or Great Comoro), has been officially announced by the present French Government, and apparently met with no remonstrance from the late Foreign Minister, Lord Rosebery.

the landing-place. With kindly forethought for others in a similar predicament, he also put on shore a cock and four hens, which have since bred, and the island is now well supplied with poultry from this original stock. A certain sentiment of humanity inspired this kind act, and the rough sailor said that he bid adieu to his whilom prison with some affection, if not regret. His future voyages were prosperous ; but, remembering his distaste for a continuous fare of cocos-germés, he ever afterwards provided for his negroes extra delicacies in the shape of rice and yams. This stretch of humane treatment was found to answer economically, as he did not lose more than from 15 per cent. of his live freight, instead of from 20 to 25, which had been the normal per-centage of former death-rates among the enviable, voluntary emigrants who took passage in his vessel to the blissful plantations of Bourbon. Consequently, the *Télémaque* soon repaid the cost of her construction several times over, and her owner and captain was enabled to realise a handsome fortune, on which he was enabled to retire and live in ease and luxury for the remainder of his days. His country house at St. Paul still remains a monument to the skill, industry, success, and humanity of the owner of the *Télémaque*.

The Real Battle of Bantry Bay.

By GEORGE F. HOOPER.

WHEN Bantry Bay became last year the scene of a brilliant naval sham-fight, which was dignified by the name of "the Battle of Bantry Bay," the Particular Service Squadron went through evolutions that promised to be of great importance in the present debatable and transitional stage of naval warfare. That spot has for many years been the chief summer rendezvous and practice-ground of the Home Fleet, and has thus acquired an importance from a naval point of view that may make it worth while to inquire into some of the circumstances of the *real* and historical battle fought there in 1689, and the events which immediately preceded and followed it.

The battle is briefly mentioned in most of our naval histories, but from the way in which it is always slurred over we are led to consider that it has no interest attaching to it. To attempt to show, however, that the action has some claim to be dealt with in more detail than has hitherto been allowed to it, will be the object of the present paper.

When William III. assumed the Crown of England he at once took steps for changing the Admiralty administration. Samuel Pepys, the immortal diarist, who as Secretary of the Admiralty had virtually full control of the affairs of the navy under the two brother Stuart Kings, was dismissed in a cruelly summary fashion, and a Commission appointed dating from 8th March 1689, Admiral Arthur Herbert being made First Lord. At that period it was customary to select annually a distinguished flag-officer and to appoint him Admiral of the Fleet for the year. In time of peace two small fleets were commissioned for the Channel and Mediterranean; while for the protection of England's Colonies, commerce, and fisheries one or two fourth or fifth rates employed on each station were deemed sufficient. On 14th March 1689 Herbert was also appointed Admiral of the Fleet, and a few days later left his official duties in Channel Row, Westminster, to superintend at Portsmouth the preparations that were being made for manning and equipping a fleet for Channel service.

—War had not been declared against France, but everything

pointed to its outbreak within a few weeks. James II. had landed at Kinsale on 12th March and had received substantial help from Louis XIV. in the shape of French officers, arms, and money. A French fleet of some thirty sail had taken him across from Brest; and although Louis ostensibly declared that he had no intention of acting aggressively in Ireland, public feeling in England interpreted the facts of the case differently. The House of Commons presented an Address to the King on 26th of April, asking him to consider seriously the disturbance caused by the French King "in the trade, quiet, and interest of the Kingdom," to which William replied, "I look upon the War so much already declared by France against England, that it is not so properly an act of choice, as an inevitable necessity in our own defence." And, accordingly, before the week was out, proclamations were issued prohibiting the importation of French goods, and recalling all seamen in the service of foreign states. An embargo was also laid on all French vessels in English ports.

In the middle of April Herbert sailed from Spithead in the hope of intercepting the French fleet that had escorted James on its return to Brest. He left orders for the ships that were not ready, to join him singly as soon as possible, and not to wait to sail together, their appointed rendezvous being either the Irish Coast or thirty miles west of Scilly. It was then too late to find the French fleet at sea, and Herbert put into Milford Haven to repair damages caused by rough weather on the Irish coast. He says in his official letter that he intended, after that, to cruise off Brest; but the wind coming easterly induced him to stand over towards Kinsale, as he expected the French would come out and he could best fall in with them there.

On 27th April Admiral Herbert's fleet of sixteen sail and two yachts left Milford Haven with easterly breezes and fine weather, and were joined next day at sea by two 70-gun ships, two hospital ships, and three ketches. The *Portland*, fifty guns, joined the fleet on 29th, and then the English line of battle amounted to nineteen sail,* carrying about 1,060 guns and nominally manned by 5,850 men. Burchett, however, tells us that most of the ships were "very ill-manned," and this we can well credit, knowing that the fleet had been despatched in haste.

At 6 p.m. on 29th the English scouts signalled that they saw a fleet to leeward keeping their wind. The wind was still easterly, and Admiral Herbert kept his wind all night to prevent the

* One of these, the *Daftmouth*, was a 36-gun frigate.

enemy from getting into Kinsale. At daybreak on 30th the admiral hoisted a red flag at the *Elizabeth's* mizen-topmast-head, the fleet cleared for action, and easy sail was made to the westward. The scouts had at daylight made signals with their top-gallant sails and topsails lowered, and by dipping their ensigns fourteen times, that the French ships sighted on the previous evening had numbered fourteen sail. All day the English fleet was only a few leagues off the Old Head of Kinsale, expecting to meet their adversaries; and in the afternoon a small Bidford trader homeward bound from Maryland was brought by the *Advice* to the Admiral, whose master informed him that he had seen the French fleet the night before. Believing that the French, who were reported to be forty-four sail in all, had put into Baltimore, Herbert bore away for that place, but found no signs of them. Pushing on westward, the English scouts discovered, before night fell, that the enemy were in Bantry Bay.*

We must now follow the French fleet, which had sailed from Brest on 26th April, or, reckoning in New Style, as French historians do, on 6th May. Lieutenant-General Château-Renault,† an experienced admiral who had performed good service for his country against the Dutch, had under his orders twenty-four sail of the line, two frigates, and nine fire-ships, besides some transports. On 29th they sighted the Irish coast between Cape Clear and Kinsale, and shortly after one of the French frigates captured a small Ostender off Roscarberry. Admiral Herbert had ordered the latter to sail, being in ignorance of the declaration of war between France and Spain, and, under cover of what he supposed to be a neutral flag, had put several Englishmen aboard her to gain intelligence of Château-Renault's fleet. The tables were, however, turned; and the French learnt the strength of our fleet, and its intention to prevent, if possible, the disembarkation of the French troops. Château-Renault's proposal had been to disembark them at Kinsale, but when he knew that Herbert was between Cork and Kinsale; with the wind in his favour, while his own fleet was thirty miles to leeward of the latter place, he altered his plan. It was necessary to select another place, and the nearest and most suitable locality, under the circumstances, was plainly the splendid bay, or rather inlet, then known as "the Bantry." The adjoining

* The details of these two paragraphs are taken from the *York's* log, in *Rushinson's MS.C. 908*; at the Bodleian Library, Oxford. I have not met with them in print.

† This amphibious title for a flag-officer was created by Louis XIV. and used a French Revolution, when it was superseded by that of Vice-Admiral.

coast with its bold, grand cliffs was a natural bulwark against any invader, and this protection was increased by the irregularity and indented nature of the shore-line, whose "out-thrust headlands and in-reaching bays" formed the counterpart of the wild and hilly country inland. Bantry Bay offered good anchorage for a fleet of any size; and while the main body remained off Berehaven, the troops and stores could be sent up to the head of the Bay, and landed in safety. This was Château-Renault's design, and he carried it out successfully.

At 2 p.m. on 30th May, the French fleet anchored in Bantry Bay fifteen miles below the town of Bantry, and every precaution was taken against a surprise being effected by Herbert. Two frigates were stationed as scouts to give sufficient warning of the English approach, as the French admiral did not consider it prudent to run any risk of being shut up in the bay, and he did not wish to engage his adversary farther in from the Heads than he could help. Preparations were at once made for disembarkation, and the saddles, bridles, powder and lead, and all other stores were placed on board six fire-ships and four transports. These had hardly left the fleet for the town of Bantry when signal guns from the outlying frigates announced that the enemy were in sight. Château-Renault, fearing that the English, if they discovered the vessels *en route* for Bantry, would detach frigates to capture them, weighed anchor, and with his whole fleet bore down to the entrance of the bay, and made short boards, so as to close the way against Herbert's ships. No engagement ensued, as the English vessels proved to be only a reconnoitring detachment.

At daylight on 1st May (or 11th in New Style) Herbert's fleet was sighted by the scouting frigate *Diamant*, and soon after it appeared off Mizen Head, beating up for several hours against a strong easterly breeze that blew down the bay. Château-Renault set sail and stood to meet his opponent, with his fleet in three squadrons, the van of 8 ships-of-the-line, under Commodore Jean Gabaret,* the centre under the Commander-in-Chief, of 8 ships, and the rear also of 8 commanded by Commodore Job Forant. Both Commodores were good, experienced sea-officers, Forant having been a post-captain for 33 years, while Gabaret had commanded a 70-gun ship at the hard-fought battle of Solebay.

At 9.30 a.m. the English admiral had worked up in line of battle to within two miles of the French fleet, when the latter bore

* Strictly speaking, a French *chef d'escadre* corresponded more to our rank of Rear-Admiral than that of Commodore, but it is usually translated by the latter word.

down in a well-formed line, and the action began by the French opening fire. The English line of battle was as follows :—*

Ships.	Captains.	Rate.	Men.	Guns.
Defiance	Ashby	8	400	64
Portsmouth	St. Loe	4	220	46
Plymouth	Carter	3	340	60
Ruby	Froude	4	230	48
Diamond	Walters	4	230	48
Advice	Grenville	4	230	48
Mary	Col. Aylmer	8	365	64
St. Albans	Layton	4	280	50
Edgar	Shovell	8	445	70
Elizabeth	{ Admiral Herbert } { Capt. Mitchell }	8	460	70
Pendennis	Churchill	8	460	70
Portland	Geo. Aylmer	4	230	48
Deptford	Rooke	4	280	54
Woolwich	Sanders	4	280	54
Dartmouth	Lay	5	150	36
Greenwich	Billop	4	280	54
Cambridge	Clements	8	400	70
Antelope	Wickham	4	230	48
York	Delvall	8	340	60

Captain Panetié, an experienced officer who had commanded a ship at Solebay, led the French van in a 70-gun ship, which only mounted 40 guns, it is said. He withheld his fire till within musket range of the leading English line-of-battle ship, the *Defiance*, commanded by the gallant Captain John Ashby, and then ordered a volley of musketry to be aimed at the English gunners through their open port-holes, which killed and wounded so many men, that when a second volley was about to follow, the English man-of-war closed her weather gun-ports. This was what the French captain wished to bring about, for, having thus enforced silence on his opponent for a time, he poured in his own broadside to cripple her aloft and in her rigging, without running any risk himself.† The heavy loss on the *Defiance* shows that he succeeded to some extent. A fierce cannonade was, meanwhile, being kept up between the vans of the two fleets, and the French fire appears, according to the custom of their Navy, to have inflicted much damage on the masts, spars, and rigging of most of our ships, so

* *Brit. Mus. Add. MS.* 81,958, fols. 21-22. This MS. is a record of the services of Admiral Sir George Byng, who was First Lieutenant of the *Defiance* in this battle.

† Boismélé.

that they fell off before the wind, and the French had little difficulty in keeping the weather-gage.

Warm fighting had also been going on in the centre of each fleet, as our list of casualties shows. The two admirals engaged briskly, but here, again, the higher elevation of the French gunnery told, and Admiral Herbert's flagship suffered so much damage, that he put her before the wind and stood out to sea; when, hauling round on to the other tack, with press of sail, the *Elizabeth* took up her station as head of the line as it reformed. Admiral Herbert did not succeed by this manœuvre in gaining the weather-gage, but drew the French admiral rather more out of the bay, and when the two flagships closed once more, a hot fire was kept up on both sides, which in time almost disabled the *Elizabeth*. Her second ahead, the *Edgar*, however, gallantly covered her and was exposed to the full fire of the French till Herbert's ship managed to take care of herself again. The other ships of the English centre also suffered much injury.

In the rear Commodore Forant obtained a slight advantage by checking two English ships detached in pursuit of the fire-ships and transports that were lying off Bantry. This was done by two French vessels which were to leeward when the action began, and had not taken up their stations, but which engaged the English ships and forced them to give way. The other ships of the English rear appear to have lost fewer men than those of the van and centre, and to have sustained less material damage. Thus the log-book of H.M.S. *York** records, "our ship got little damage, only four men wounded, and our long-boat shot from our stern"; while that of her second ahead but one, the *Cambridge*,† gives "the damage as follows by their random shot; viz. our bowsprit and main-topmast shot, and two shot betwixt wind and water, and several other shot placed in our side; the killed, one man, and wounded, 4 more, and lost our long-boat and yawl."

Between 4.30 and 5 P.M. the French admiral tacked and stood farther into the bay, while Herbert, after giving him a gun at parting, lay-to off the bay while several of the English ships stopped their leaks, and then bore away to the southward, appointing Scilly as a rendezvous whence he said that he hoped to bring the French to a second engagement.

The losses in this battle can only be given with any approach to certainty on the English side, as the French record dubiously states that "the victory (!) cost them few men; not an officer was killed,

* *Rawlinson MS.*, O. 968, at the Bodleian Library, Oxford.

† *Rawl. MS.*, C. 969, also at the Bodleian.

and but a small number wounded." The English loss was as follows* :—

	Killed.	Wounded.		Killed.	Wounded.
Defiance	22	40	Elizabeth	15	17
Portsmouth	8	6	Pendennis	6	14
Plymouth	10	17	Portland	1	8
Ruby	2	8	Deptford	5	8
Diamond	2	17	Woolwich	5	10
Advice	4	12	Dartmouth	0	2
Mary	1	5	Greenwich	1	15
St. Albans	4	28	Cambridge	1	5
Edgar	18	48	Antelope	0	0
York	0	6			

These figures give a total of 95 killed and 251 wounded,† and the two officers do not appear to be reckoned among them. Captain George Aylmer, of the *Portland*, and a lieutenant whose name is not given, were killed. The loss is about equivalent in ratio to that of Lord Howe's fleet on the 1st June 1794, if due allowance be made for Herbert's ships being undermanned.

Admiral Herbert's gazette letter speaks of the French not making use of their fire-ships; but we know the reason why Château-Renault could not avail himself of them. They had been sent up to Bantry the day before, and the French admiral had flattered himself that he would have time to get them back before the English approached. It was a fortunate matter for our fleet that they did not arrive in time. Herbert had three fire-ships with him, the *Firedrake*, Captain John Leake, *Saudadoes*, Captain Wivele, and *Salamander*, Captain Gother; but the conditions of wind and weather did not permit of their being made use of.

No ships were lost on either side, but the French frigate *Diamant*, Captain Chevalier de Costlogon (who afterwards was a flag-officer at La Hogue) caught fire and had a narrow escape of being blown up. She was set on fire by a cannon-ball which fell among a pile of grenades, and a barrel of gunpowder exploded, blowing part of her stern away.‡

The battle itself was an indecisive affair, with a slight advantage

* This list is a document of the period, and is among the Pepys papers at the Bodleian, in *Rawl. MS.*, A. 170, f. 198.

† Comparing four reliable accounts we find the following totals. Burchett in his *Memoirs*, and the *Brit. Mus. Add. MS.* 81,958, give 90 killed and 270 wounded; the *London Gazette*, No. 2451, of 1689, 94 killed and about 250 wounded; and the *Pepys MS.* as above.

‡ This is given on Père Daniel's authority. A different version appears in the *Mémoires du Maréchal de Tourville*.

on the French side, which circumstances gave them. As a study in naval tactics it shows the usual manœuvres of the period, and, from the scanty accounts we have drawn upon, it appears that "battering upon a stretch" mostly occupied the time between noon and 5 P.M. But interest lies in the fact that the French admiral carried out the object of his expedition, and returned safely to Brest with his fleet much less injured than that of Herbert. Château-Renault had given proof of good admiralship by his careful and rapid change of plan as soon as he heard of the proximity of our fleet, by his ability in executing it on a strange coast, with an attack imminent, and by his cautious handling of his fleet during the action. He had the luck on his side all along, and when off Ushant on $\frac{1}{15}$ May, made some amends for not carrying out fully his expectations at Bantry Bay by capturing seven Dutch merchant-ships homeward-bound from Curaçao. The following verses commemorated the event :—

La Flote de Louis le Grand,
Ayant fait fuir la Flote Britannique.
Neptune envoya d'Amérique,
En faveur de ce conquérant
Que sa valeur élève au faite de la gloire,
Sept gros Vaisseaux chargés du prix de la victoire.*

The French fleet re-entered Brest on the $\frac{1}{17}$ May, having only occupied eleven days in carrying out its mission.

"Both sides," wrote Macaulay, "claimed the victory. The Commons at Westminster absurdly passed a vote of thanks to Herbert. James, not less absurdly, ordered bonfires to be lighted and a *Te Deum* to be sung." But James, with his life-long affection for that navy of which he had been Lord High Admiral as well as Sovereign, and which he had in person commanded in action against the Dutch, must have had mixed feelings of joy and regret on hearing of the English repulse, and we may accept as correct his answer to the French ambassador who announced "the victory," "C'est bien la première fois donc."†

Admiral Herbert returned to Spithead, claiming to have done his best under unfavourable circumstances, and with an inferior force, and giving due credit to the officers and seamen under him. "As for our officers and seamen," he wrote officially, "this right must be done them; that they behaved themselves with all the courage and cheerfulness that could be expected from the bravest men." Yet there does not seem to have been unanimity of opinion in the fleet itself, as to the merits of the action; for Dalrymple,

* *Mémoires du Maréchal de Tourville*, Amsterdam 1799, iii. 70.

† Dalrymple's *Memoirs*, &c., i. 332.

the historian, speaking of both sides having "claimed the superiority in public," adds, "but there was this difference in the private sentiments of those they [the rival admirals] commanded, that the English officers and seamen termed it a defeat not to have been victorious on their own element, and the French accounted it a victory because they were not defeated."* And the King is reported to have said, "Such an action was necessary in the beginning of a war, but it would be rash in the course of it."

William journeyed down from Hampton Court to see his fleet on their return, and stayed a night at Southwick House. Next morning, 18th May, he drove into Portsmouth, escorted by about 100 of the townsfolk on horseback, and, after being received by the mayor and corporation, passed through the streets of the town, finding them crowded with people and lined by the troops in garrison. The Admiral and his captains met His Majesty and conducted him to dinner aboard the flagship, after which the King declared his intention of conferring a peerage on Admiral Herbert, and of bestowing the honour of knighthood upon Captain John Ashby, who had led the fleet well, and on Captain Cloudesley Shovell, of the *Edgar*, who had gallantly stood by his chief and relieved him when the fire grew too hot. Admiral Herbert was, accordingly, by Letters Patent of 29th of the same month, created Baron Torbay and Earl of Torrington; but, dying in 1716, without issue, his title became extinct.

Further, to encourage the seamen, the King ordered a gratuity of ten shillings to be given to every man present in the action of 1st May, the total sum being about £2,600, which may, perhaps, help us to fix the total of the crews of the line-of-battle ships at about 5,000 men. This, together with the prospect of prize-money, had the desired effect; for, immediately after the news of the battle spread through the country, we hear of the merchant seamen offering to join the Navy in considerable numbers from Bristol, Weymouth, King's Lynn, and other ports.

War had been formally declared against France by Royal Proclamation on 7th of May, and thus the Battle of Bantry Bay formed a prelude to the long and costly struggle which lasted for eight years between the three chief maritime powers of Europe, and which, after a hollow peace, led on to the greater naval wars of the eighteenth century.

* Dalrymple's *Memoirs*, &c., i. 382.

The Royal Navy.

FROM THE ACCESSION OF H.M. THE QUEEN.

By ROBERT O'BYRNE, Barrister-at-Law, F.R.G.S.

(*Continued from page 333.*)

CHAPTER III.—OFFICERS AND MEN—*cont.*

WE last month completed our analysis of the changes effected during Her Majesty's reign in the condition of the Executive Branch of the Navy. We now proceed to the Navigating Class, formerly known as MASTERS, SECOND MASTERS, and ASSISTANT MASTERS, and now as STAFF CAPTAINS, STAFF COMMANDERS, and NAVIGATING LIEUTENANTS.

On the 20th of June 1837 the number of Masters on the Active List of the Navy was 446; 134 of whom only were in employment.

The Report of the Commissioners appointed to inquire into the Naval System of Promotion and Retirement (10th August 1840), recommended that the full pay of Masters serving in first, second, and third rates, should be increased to 11s. 8d. a day, or £16 6s. 8d. a lunar month; that of Masters serving in other rated ships should be increased to 10s. a day, or £14 a lunar month; and that the full pay of Masters serving in sloops and smaller vessels should be increased to 8s. 4d. a day, or £11 14s. a lunar month.

The Admiralty Board having had for some time under their consideration the various representations from the Masters of the Navy as to their situation and prospects in respect to half pay and promotion, and being thoroughly impressed with a conviction of the claim of the Masters to favourable attention in these respects, from the value of their services in their particular line of duty, decided by an Order in Council, under date 19th May 1846, that a retirement should be provided for old and deserving Masters.

With this view, a Retired List of 40 Masters was established,

consisting of two rates of retired pay, viz. First, 12s. 6d. a day to such Masters, not exceeding 20 in number, as had actually served afloat for 25 years as Acting Master or Master, or should have completed that period by service combined with that of Assistant Master Attendant and Master Attendant, should be 55 years of age or upwards, and should have passed for a line-of-battle ship; and, secondly, 10s. 6d. a day to such further number of Masters as may be required to complete the Retired List of 40, provided they should have served in the above-mentioned capacities 15 years, and should be 55 years of age; the Masters of such Retired List to be selected from those standing highest on the list of their class, who possessed the requisite qualifications, and who desired to be included in the retirement.

It was further decided that the said Retired List should be a separate one, and that with respect to the general list of Masters for service, no alteration should take place; but that only 1 promotion should be made for every 3 vacancies until the list of Masters should be reduced to 400, at which number it was proposed to be maintained, their different rates of full and half pay remaining at the then existing scale, with the exception of such masters as should not have served afloat as Masters six complete years, who should not be entitled to any increase of half pay beyond 5s. a day, the Admiralty, however, reserving to itself the right to grant an increase of half pay, if inability to serve had been occasioned by wounds, or ill-health arising from service. The Masters placed on this Retired List were entitled to rank with, and to wear the uniform of, Commanders in the Navy.

Under this Order in Council it was further provided that time served as Masters should be considered as time served as Lieutenant to qualify an officer to receive a commission as Commander, in the event of any particularly distinguished conduct.

On the 15th of June 1852 it was ordered that in the case of Second Masters meeting their death while on active service from violence or other causes clearly attributable to the service, their widows should be entitled to a pension of £36 per annum, commencing from the date of their husbands' death.

On the same occasion the half pay of Second Masters was fixed at 2s. 6d. a day after 8 years' sea service as Second Masters, provided they had not been successful in getting employment. It was further determined that the specified period of 8 years' service should be dispensed with in the case of officers invalided for sickness, or injuries caused by service, and in other cases according to the discretion of the Board.

On the 24th of October 1853, Second Masters and Masters' Assistants were allowed to take rank and seniority from the date of their passing in seamanship, whether at home or abroad, provided they had passed at the Royal Naval College or Trinity House within the regulated period; and if failing to pass either of these examinations, the Admiralty to fix the question of rank and seniority according to the merits of each individual case.

On the 29th of December 1853, a Reserved List of Masters was established, of such Masters who from age, physical infirmity, or other causes, were incapacitated from active service. Under these regulations, the number of Masters on the Active List was reduced to 800, exclusive of Masters holding Dockyard or Victualling-yard appointments. The qualifications for being placed on this Reserved List were either incapacity for further service, or the age of the officer being in excess of 65, or 60 if unemployed either in the Navy or Coastguard Service for a continuous period of 12 years.

On the 25th of February 1855, the full and half pay of Masters, Second Masters, and Master's Assistant was remodelled as follows:—

Full pay—A Master of the Fleet, £865 a year. All other Masters to continue as heretofore to take rank and command according to the dates of their commissions, but Masters on full pay to be distributed into 5 classes, according to the following scale:—1st Class, Masters qualified for first and second rates, and having completed 20 years' full-pay service, including not more than 8 years' service in full pay as Second Master, qualified for Master £928 10s. a year; 2nd Class, Masters, qualified as above, with only 15 years' full-pay service, £278 15s. a year; 3rd Class, Masters, with only 10 years' full-pay service, £219 a year; 4th Class, 6 years' full-pay service, £215 a year; 5th Class, less than 6 years' service, £182 10s. a year. In the case of Second Masters, £91 5s. a year to be allowed to all qualified for the rank of Master; £78 a year for above 4 years' full pay service, though not qualified for Masters; £66 18s. 4d. under 4 years' service. In addition to the foregoing rates of full pay, the following store allowances were granted to Masters in charge of Stores; 1, 2, and 3 Rates, £78 a year; 4, 5, and 6 Rates, £48 18s. 4d.; sloops ditto, £38 0s. 5d. Second Masters in charge of Stores to be allowed £27 7s. 6d. a year.

Half-pay: Masters under 5 years service' in the rank of Master, to be allowed £91 5s. per year; under 10 years', £109 10s.; under 15 years', £146; if qualified for 1st and 2nd Rates, £182 10s.; above 20 years', £237 5s.; Second Masters to be made an allowance of 2s. 6d. a day, or £45 12s. 6d. a year, after 8 years' sea

service as Second Master, provided unsuccessful in getting employment and not declining such when offered; this sea-service period to be dispensed with in cases of sickness or injuries incurred on service. Masters at 60 years of age, and qualified for 1st Rates to be permitted to retire with the rank of Commander after 15 years' full-pay service as Master, and with the rank of Captain after 20 years' service—the amount of retirement to be fixed according to the rate of half pay entitled to by service as Master. Masters above 55 years of age and under 60, being totally disqualified by sickness, or injuries contracted in the service, and rendered incapable of further service afloat, to be allowed, at the discretion of the Admiralty Board, to retire with the rate of half pay which they may have earned, and with the rank of Commander, provided they have completed not less than 15 years' service in the rank of Master.

On the 30th of January 1856 it was found necessary, for the proper and safe navigation of Her Majesty's ships, to increase the number of Masters on the Active List from 300 to 400.

Masters serving as Agents for Transports were allowed from 27th August 1857 to reckon such service as sea-time.

On the 11th of January 1859 Second Masters were made eligible for promotion to the rank of Lieutenant for special and brilliant service. On the 6th of June, in the same year, the age for the entry of Masters' Assistants was extended to 20 years, provided such candidates had previously served 2 years at sea.

On the 22nd of February 1860, the full and half pay of Masters, Acting Masters, Second Masters, and Masters' Assistants was regulated as follows—the figures in brackets denoting half pay:—

Masters, with less than 5 years' service, per diem, 10s. (5s.); less than 10 years, 11s. 6d. (6s.); less than 15 years, 13s. (8s.); less than 20 years, provided they have passed for line-of-battle ships, 15s. (10s.); less than 25 years, with the same proviso, 18s. (13s.); more than 20 years, 20s. (15s. 6d.); Second Masters, qualified for Masters, 7s. 6d. (2s. 6d.); Second Masters, not so qualified, 5s. (to be only allowed after 3 years' service upon wounds, or unable to obtain employment); Masters' Assistants when above 17 years of age, and with more than 2 years' service in the Navy or Merchant Service, 4s.—all others, 3s.

Under the same date as the preceding paragraph it is ruled that Masters' Attendants, Assistant Masters' Attendants, and Queen's Harbour-masters, should have the permanent rank of Commander, no officer being continued in this position after the age of 65;

and on retirement to receive the rank of Retired Captain. These officers to receive 6d. a day for each complete year's service in such capacities in addition to their half pay as Masters. Time served as Masters-Attendant, Assistant Masters-Attendant, and Queen's Harbour-master, to rank as service towards increase of full and half pay. Masters of the Fleet to have 6s. a day in addition to the pay they are entitled to as Masters, and to have the temporary rank of Junior Commanders. Masters recommended for distinguished service to be considered eligible for promotion to the rank of Commander, provided they shall have served two years at sea as Masters; Second Masters also to be promoted, under similar circumstances, to the rank of Lieutenant, after 7 years' sea service.

In 1861 Masters of Flag-ships abroad being considered to have additional duties and responsibilities imposed upon them, were allowed from 2s. 6d. to 5s. per day at the discretion of the Admiralty Board. On the 11th of October in this year the pay of the Masters-Attendants of the principal Home Dockyards was increased from £480 to £600 per annum; and the pay of Masters-Attendants of Victualling Yards and Foreign Yards, and all Assistant Masters-Attendants from £380 to £500.

On the 9th of July 1864 an O. C. was issued directing that all Masters-Attendants, Staff Commanders, and Masters should be removed from the Active List on attaining the age of 60, or previously if proved physically unfit for service, and that they might have the option of retiring at the age of 55 on half pay.

Considering that it would be for the advantage of all, that Staff-Commanders, as the Senior Masters were now styled, and Masters who from ill-health, long residence on shore, or other causes, might be considered as unfit to take charge of and navigate ships, should be removed from the Active List of Officers, the Admiralty decided, on the 31st of March 1865, that the following should from time to time be removed to the Reserved Half-Pay List:—1stly. All Staff Commanders and Masters who had not served afloat in the Coastguard, as Naval Agent, or as Agent for Transports for a period of 7 years. 2ndly. All Staff Commanders and Masters who held appointments of a civil nature, and were not desirous of further service afloat. And, 3rdly, all Staff Commanders and Masters who, from previous misconduct or incapacity, might be considered as unfit for employment. Those officers to be granted the rank of Retired Captain who, as Staff Commanders, had been removed from the Active List, after 20 years' service in

full pay in the rank of Master and Staff Commander, provided the age of 55 had been attained.

In the December of 1865 it was further ruled, in connection with the Coastguard, that Acting Masters in tenders should be styled "Chief Officers," Acting Second Masters as "Senior Mates," and Acting Masters-Assistants as "Second Mates." In July 1866 retiring pensions and pensions to widows of these officers were granted; the Chief Officer's pension to be £100 a year, with an additional £5 for each year's service as Chief Officer, the maximum to be limited to 180; Senior Mate's pension to be £82 a year, and an addition of £8 for each year's service as a Senior Mate (maximum £110); and Second Mate's £62 a year, under the same conditions of increase as allowed to Senior Mates (maximum £100.) Their widows were allowed respectively pensions of £50, £35, and £25.

On the 26th of June 1867 the following regulations were made in respect of Navigating Officers:—

1.—The titles of Officers composing the Class to be: Navigating Cadet (in lieu of Naval Cadet 2nd Class), Navigating Midshipman (in lieu of Masters-Assistant), Navigating Sub-Lieutenant (in Lieu of Second Master) Navigating Lieutenant (in lieu of Master), Staff Commander, and Staff Captain.

2.—Gentlemen to be entered as Navigating Cadets between the ages of 18 and 15.

3.—The examinations to be the same as hitherto, except that the regulations regarding forfeiture of time for rejection at the Royal Naval College be assimilated to those in force for Sub-Lieutenants. Officers not passing at the Trinity House within 2 months after passing at the Royal Naval College to be discharged to the shore, and to be deprived of 3 months' seniority. Officers not passing within 3 months to be dealt with as thought fit, either as to further deprivation of time, or removal from the service.

4.—Navigating Lieutenants, instead of passing at the Trinity House for line-of-battle ships after 3 years' service in that rank, to be required to pass for ships of the First Class, drawing 26 feet of water and upwards.

5.—Navigating Sub-Lieutenants to rank with Sub-Lieutenants according to date of commission. Navigating Lieutenants to rank with Lieutenants, Staff Commanders with Commanders, and Staff Captains with Captains under 3 years' standing.

6.—Navigating Lieutenants to be qualified for promotion to the rank of Staff Commander after 10 years' service as Navigating Lieutenants, or on attaining 15 years' seniority, with not less

than 7 years' service as Naval Lieutenant. In both cases, 5 years' service must be sea service, and the officer must have passed for first-class ships. It was, however, to be distinctly understood that promotion to the rank of Staff Commander should be at the discretion of the Board, and to be given only to officers of good character and qualifications.

7.—Navigating Lieutenants to be eligible for promotion to the rank of Staff Commander for distinguished or highly meritorious services, provided they had completed 2 years' sea service as Naval Lieutenant. Should an officer to be so promoted not have passed for first-class ships, he was only to be promoted to the rank of Acting Staff Commander, but to be confirmed with his original seniority, provided he passed within a reasonable time after his arrival in England.

8.—Officers of the Navigating Class may be transferred for distinguished service in the presence of the enemy to the Active List of those Executive Officers with whom they may rank at the time of performing such service, carrying with them their seniority, and the benefit of their larger rates of full and half pay (if any), until subsequently promoted to a higher rank. Navigating Officers may also, at the discretion of the Board, be promoted to a higher rank in the Executive branch, should the circumstances of the case appear to deserve it.

9.—The rank of Staff Captain to be confined to Masters-Attendant, Assistant Masters-Attendant, and Queen's Harbour-master, and to Masters of the Fleet, when so employed.

10.—The pay of Navigating Sub-Lieutenants to be 5s. a day, and to be increased to 7s. 6d. a day after 2 years' service.

11.—The full pay of Navigating Lieutenants and Staff Commanders to be as follows:—Under 5 years, 10s. a day; under 10 years, 12s. 6d.; under 15 years, 14s.; under 20 years, 16s. 6d.; under 25 years, 19s. 6d.; 20 years, £1 1s. 6d.; provided, in the three latter cases, they have passed for first-class ships.

12.—Staff Commanders, on promotion, to receive 14s. a day, or such higher pay as they may be entitled to by service.

13.—Half pay to continue the same, except in cases where Staff Commanders, on promotion, receive 8s. a day, or such higher pay as they may be entitled to.

14.—Navigating Lieutenants and Staff Commanders, when in command of any particular ship or vessel, to receive the same rate of command-money as Lieutenants and Commanders.

15.—Store and other allowances, widows' pensions, compassionate allowances, &c., to continue as heretofore.

16.—All Navigating Officers to be placed on the Reserve List on attaining the age of sixty, and any other conditions provided for under Order in Council of the 31st March 1865.

17.—Staff Commanders to be allowed to retire when unfit for further service, or on attaining the age of fifty-five, on the following lists:—Under 15 years' service, no increase to be allowed to half pay; under 20 years' service, the reserved half pay will be 12s.; under 25 years, 15s.; over 25 years, 17s. 6d.

On the 22nd of February 1870 an Order in Council was issued to the following effect, as relates to Navigating Officers: Staff Captains to be retired at the age of 60, or at any age if they have not served for 7 years; Staff Commanders at 55, or at any age if they have not served for 5 years; Navigating Lieutenants at 45, or at any age if they have not served for 5 years. Any of these retirements may be enforced by the Admiralty, irrespective of age, if an officer is found physically unfit for service. Staff Captains to have the option of retiring at the age of 55, and Staff Commanders at 50. The Active List of Navigating Officers to be reduced to 15 Staff Captains and 250 Staff Commanders and Naval Lieutenants. A number of Navigating Officers, not exceeding in all 3 annually, may be promoted from the rank of Staff Captain, Staff Commander, Naval Lieutenant, or Naval Sub-Lieutenant, to be Captain, Commander, Lieutenant, or Sub-Lieutenant respectively, subject to the regulations of the Board.

In April 1870 the Admiralty withdrew the limit of Staff Captains, a rank which had heretofore been confined to officers holding the appointment of Masters-Attendant, Assistant Masters-Attendant, Queen's Harbour-master, and Masters of the Fleet so employed, and extended the privilege to any Staff Commander they might select for the honour.

On the 9th of August 1872 Navigating Sub-Lieutenants came under the following regulations:—1st. Enforced retirement at the age of 40, or if physically unfit. 2nd. Retired pay to be granted as follows: after three years' seniority, 8s. 6d. per day, an additional 6d. to be added for each complete year beyond 3 years served in this rank (maximum, 6s. a day). 3rd. Permission to commute their retired pay.

On the 24th of March 1876, the Admiralty Board, considering the great responsibility attaching to the officers performing the navigation duties on board the larger ironclad ships, viz. those in which a Commander is borne decided that it was expedient to grant to such, in addition to their pay and allowance, a further sum of 2s. 6d. a day, or £45 12s. 6d. per annum.

On the 18th of March 1880, it was ruled in the matter of the promotion of Staff Commanders to the rank of Staff Captains that to qualify for such a promotion a Staff Commander must either receive an appointment as Masters-Attendant, Assistant-Masters Attendant, or Queen's Harbour-master, or must have completed 15 years' sea service as a commissioned Navigating Officer.

On the 1st of April 1881, an additional Greenwich Hospital pension of £80 a year was established for the benefit of a Staff Captain.

The Active List of PURSERS, now known as PAYMASTERS, numbered 577 at the commencement of the Queen's reign. Of these 102 only were on active duty.

In consequence of the Report of the Commission appointed in 1837 for the purpose of inquiring into the retirement and promotion of Pursers, the following recommendations of the Committee were adopted, and came into operation on the 1st of July 1848.

A Retired List of Pursers formed, consisting of 30 of those Pursers who had held that rank 30 years, of good character, and of such service as in the estimate of the Board entitled the officer to retire. These were to receive 8s. 6d. a day.

The remaining Pursers were divided into 3 Classes; the 1st Class consisting, in the first instance, of the first 70 Pursers on the List, to be allowed 7s. a day; this Class to be reduced by degrees to 50; the 2nd Class, consisting of the next 100, at 6s. a day; and the 3rd, or remaining, Class to receive 5s. a day.

With the view of effecting a more rapid reduction of the number of Pursers on the List, it was determined to limit the promotions of Clerks to be Pursers to 1 for every 3 vacancies, and to defer any advancement of Clerks to be Pursers on the occasion of any general promotion until the List of Pursers was reduced to 450.

In December 1845, such Clerks as had passed, or should hereafter pass, the required examination to qualify them for the rank of Paymaster and Purser, were allowed to receive a pay equal to £5 per lunar month.

On the 2nd of March 1852, the following Resolutions were adopted by the Board:—

“Paymasters and Pursers” to be designated “Paymasters of the Navy.”

The Active List of Paymasters to be limited for the future to 300.

To effect this object, the following classes were established:—
1st. All Paymasters of 65 years of age and upwards to be placed

upon retired or reserved lists. 2nd. All of 60 years of age who had not been employed for 10 years. 3rd. All disqualified from physical or other causes. 4th. Officers holding civil appointments in dockyards, hospitals, &c. 5th. Officers superannuated for civil service in the above establishments. 6th. Secretaries on the half pay of 12s. a day.

Classes 4 and 5 were placed on a separate List.

Classes 1, 2, and 3 to receive 1s. 6d. a day in addition to the rate of half pay.

No additions were to be made to the above retired Lists, except of such Paymasters who on the Active List remained unemployed.

The scale of Full Pay granted under the O. C. we are analysing was as follows:—1st Rates, £1 7s. 5d. per day to each Paymaster; 2nd Rates, £1 4s. 8d.; 3rd Rates, £1 1s. 11d.; 4th Rates, 19s. 2d.; 5th Rates, 16s. 5d.; 6th Rates, 13s. 8d.; Sloops, 10s. 6d.; Clerks in charge, 7s. 6d.

Paymasters of Flag-ships on Foreign Service were allowed, in addition to the above, 2s. 9d. a day.

When troops were embarked on board, or victualled, from one of Her Majesty's Ships, the Paymaster was to have an allowance in addition to his pay, 1s. 6d. a day for every 50 officers and men borne on the ship's books, or victualled; below that number no allowance to be made.

Paymasters specially employed were allowed such rates of pay as the Board should decide in each individual case.

In order to ensure the services of these officers when required, to stimulate their zeal for the interests of the public, and to guarantee, as far as might be, the efficient and faithful discharge of their duties, the following rules, rendering promotion from one rate of ship to another contingent upon sea service and good conduct, were laid down:—

1st. A Paymaster to serve 8 years, at least, in vessels of the Sloop Class, before he is eligible for an appointment to a 5th or 6th Rate. 2nd. To serve 8 years in a 5th or 6th Rate before appointment to a 3rd or 4th Rate. 3rd. To serve 3 years in a 3rd or 4th Rate to qualify for a 1st or 2nd Rate.

No officer, when paid off from one ship, to be appointed to another, or advanced to a higher rate, unless he has rendered and passed his accounts in office in a creditable manner, and has discharged his duties with zeal and attention.

In the event of a vacancy occurring for a Paymaster in a ship on a foreign station from death, invaliding, or otherwise, the Commander-in-Chief is empowered to fill up such vacancy by an acting

appointment only. To prevent a redundancy in the list of officers qualified for rated ships, the number of officers for that class was limited to 170, leaving 180 for the Sloop Class.

On the 28th February 1855 the Pay and Classification was further regulated of Paymasters, Assistant Paymasters, Clerks, and Assistant Clerks. By these regulations, Clerks' Assistants were to be called Assistant Clerks; Clerks unpassed, clerks; Clerks passed, under 4 years' full-pay service as such, Assistant Paymasters 2nd Class; ditto, above four years, Assistant Paymasters 1st Class; Clerk in charge, Assistant Paymaster in charge; Paymaster, sloops, &c., 6th Rate, Paymasters 4th Class (130 in number); Paymasters 5th Rate and Paymasters 4th Rate, Paymasters 3rd Class (80 in number); Paymasters 3rd and 2nd Rate, Paymasters 2nd Class (60 in number); Paymasters 1st Rate, Paymasters 1st Class (80 in number).

These new regulations carried with them an increase in pay of £9 2s. 6d. per annum to each Assistant Clerk and Clerk; £15 14s. 2d. to each Assistant Paymaster 2nd Class; £39 10s. 10d. to Assistant Paymasters 1st Class; £18 5s. 0d. to each Assistant Paymaster in charge; £57 15s. 10d. to each Paymaster 4th Class; £50 8s. 9d. to each Paymaster 3rd Class; £74 10s. 5d. to each Paymaster 2nd Class; and £100 7s. 6d. to each Paymaster 1st Class.

The subject of half pay of Paymasters passed through a new revision in the February of 1860. By these regulations, a Paymaster having less than 3 years' service was to receive a half pay of 5s. a day; less than 6 years, 6s.; less than 9 years, 7s. 6d.; less than 12 years, 9s.; less than 15 years, 10s. 6d.; less than 20 years, 12s.; over 20 years, 14s.

In 1864, Paymasters having attained the age of 60, or previously, if proved to be physically unfit for service, were compelled to retire, the retirement being voluntary for Paymasters of 55. Paymasters who had completed 20 years' service, including Acting Paymaster's time, and not more than 4 years' time as Assistant Paymaster, were entitled to retire with the rank of Paymaster-in-Chief.

In 1867 Paymasters were allowed half pay at the rate of 15s. 6d. a day after 25 years' service. It was at this time also decided to considerably reduce the entry of Assistant Clerks, the new rating of "Writer" being introduced. These "Writers" were to assist in ships' offices, and to mess with Seamen's Schoolmasters and Masters-at-Arms.

In 1868, 1s. a day was added to the pay of an Assistant Paymaster after 9 years' service.

In 1870 the Active List of Paymasters, including Secretaries, was ordered to be reduced to 240, and the number of Assistant Paymasters, Clerks, and Assistant Clerks, to 260.

In 1873, in order to increase the efficiency of the Paymasters' List and to maintain a steady and more equal flow of promotion, it was found necessary to reduce the Active List of Paymasters, including Secretaries, to 200; the Active List of Assistant Paymasters, Clerks, and Assistant Clerks, to 230. To promote retirement in order to secure this reduction, Paymasters were temporarily allowed to retire at any age.

(To be continued.)

Whose Gift?

By J. SALE LLOYD.

"WHERE did you get them, Eva?"

"I do not see that you have any right to ask."

"No right! In Heaven's name, then, who has?"

"You need not use such strong language; there is nothing I detest like a scene, and the servants will overhear you, if you raise your voice so much."

"Scene or no scene, I *will* be answered; where did you get those ear-rings? You have not worn them before, and I am certain they were not in your possession a month ago."

"Very likely not."

"That is no reply."

"It is the only one I mean to give."

"But I *insist* on one—and a truthful one."

"You *may* lead a horse to the water, but you cannot force him to drink."

"Am I to understand, then, that you defy my authority?"

"You must understand what you please."

"Mrs. Philips, you are just the sort of woman to send a man to the devil!"

"Really! you flatter me! How long, may I ask, have you believed so greatly in my power?"

They stood facing each other, pale with passion, this man and wife: he, dressed in the usual evening suit worn by gentlemen; she, in a tasteful, if not costly costume of soft *écru*, trimmed with marabout to match, her only ornaments being a pair of diamond ear-rings, the scintillation of which bespoke them stones of the first water.

He was not much above middle height, but well made and powerful, looking every inch a man, and a man of iron will—a gentleman, too, in the broad sense of the word. Certainly no carpet knight was Arthur Philips; a trifle rough, perhaps, and

lacking that suavity with women which generally marks the dealings of the aristocracy towards the softer sex, but true as steel, and honest as the day. Every sort of untruth, every sort of shuffling, was abhorrent to this man. To every point, he went in a direct line, and allowed himself no deviation from it; and he expected the same straightforwardness in others, most of all in his wife, and now stood regarding her with cold grey eyes, and the face, which could look so earnest and kind, set and angry.

Closely cropped whiskers and beard covered both face and chin, but the dark moustache could not hide the firm, well-shaped mouth and square cut teeth, which looked hard enough then.

She did not flinch from his searching gaze, but remained passive, without even a flitting flush to betray the emotions passing within her heart, which were noted only by the rise and fall of the downy feathers about her white breast.

"Unfortunately for me, I not only found out your power, but yielded to it."

"Which, put into plain English, simply means that you regret our marriage?"

She dropped her eyes as she asked the question; and for the first time a rose-leaf tint mantled her cheek—his answer meant so much to her. She had made an assertion, but she had made it interrogatively, and now paused for the reply. She only wanted a soft word, and her wilfulness would vanish as morning dew. But he was angry with her, and no reply came. For a moment her heart contracted with an unwonted pain—the next it hardened.

Very proud was Eva Philips. The only daughter of a baronet, she had married, contrary to her father's consent, the man she loved, a man against whom fortune had turned her wheel, a man whom "luck" seemed to pass by; who had worked hard for every penny he had earned; and she had followed him into his hard-working life.

Arthur Philips had invested his little all in a small colliery, and with that he must rise or fall. These circumstances had separated his wife from all her old friends and acquaintances, or nearly all, the solitary exception being some cousins of her own, who resided at "Fairmead," which was a very pretty estate six miles away from her home. The master of that perfect little establishment was Harry Ansley, still a bachelor, notwithstanding his handsome face and good fortune, for reasons known only to himself; the fact being that he had considered his cousin Eva Ansley the one perfect woman in the world, for all that he had never told her so. Mr. Ansley could, therefore, in no way blame his cousin for his dis-

appointment when she married, and had the manliness to stand by her when friends and relations fell away. It was fate, perhaps, which threw their paths together after her marriage; for her husband, as has been before stated, soon afterwards bought the small colliery of Heathgate; and there, while still a bride, she had settled down, isolated from society, except for that of her cousins at Fairmead, and a few new-made friends living within a get-at-able distance; for the village boasted of only the colliers and their families as inhabitants.

When Mr. and Mrs. Arthur Philips arrived, Harry Ansley had not much difficulty in persuading his fond old mother, who made her home with him, to call upon his cousin, regardless of the anger of the irate head of the family—for Sir George Ansley had vowed never to forgive his daughter, and never again to speak to *anyone* who countenanced her; a threat he was but too likely to carry out, for Sir George was a hard man, and the only being who had ever exercised a gentle influence over him was sleeping in "God's Garden," and could influence him by her quiet words no more.

Eva had been just eleven months married; it had been such another foggy November day as the one on which she had promised to leave her gay life behind, to become Arthur's wife. With her husband at the works all day, she had felt lonely, and the atmospheric oppression had weighed upon her; she had therefore joyfully hailed an unlooked-for invitation to dine at seven o'clock at Fairmead with her cousin, who had arranged that Mrs. Ansley's cozy brougham should fetch her and her husband in due time, and accepted the proposal with more than her usual warmth. She had come to her husband, at his express wish, with nothing. He was too proud and independent to allow his wife to bring him even *clothes* bought for her by the man who had fairly insulted him when he had asked for her hand. It was, therefore, to a somewhat scantily supplied wardrobe that the young wife turned, after having replied to Mrs. Ansley's note: "A few friends were coming unexpectedly to dinner, would she like to join them with her husband?" Of course she would, but what should she wear? She had been trying her hand at making a new dress, but it was not finished, and she questioned if she could get it done in time; however, having carefully inspected the older ones in turns, she decided that none were good enough, and set herself diligently to work.

Thus it happened that she was tired, and somewhat irritable when her husband returned home, and moreover had neglected those little things which it had been for long months her wont to do. With only a general servant and girl to help, Eva's hands

were often busied in those trifles which make the home wheels run smoothly, and for the first time Arthur returned without a welcome.

His wife was generally listening for the sound of his latch-key; but to-night the lamp was not even lighted in the tiny hall. He opened the doors to right and left, of dining and drawing-room, and was greeted by blackness; the dying embers of a fire were still flickering in one of the grates, and that was all.

He groped his way to the kitchen door, and opened it. The maid, having no dinner to prepare, was absorbed in the columns of *Bow Bells*, and was eagerly following the fortunes of a girl in her own class of life, who in two short years was changed from her grub-like existence into a butterfly duchess, and had forgotten her mistress's afternoon tea, and the unlighted rooms, in her excitement, until her master stood before her.

Mrs. Philips, deep in the mysteries of lace and frills, bows, and pleats, had forgotten them too.

"Mary, where is your mistress?"

"Upstairs, Sir, in her own room."

And before the abigail could say more, the door had closed and Mr. Philips was feeling his way up in the darkness. The first light greeted him as he stood within his wife's chamber.

"There! I have done at last!" she exclaimed, as she raised her eyes to him, and held up the really pretty dress she had just finished. "Does it not look nice?"

"Why is the house all in darkness, Eva; and why are the fires all out?" he inquired, without replying to her question.

"We are going to dine at my cousins," she said, her face lighting up with pleasure.

"Oh! *are we*?"

There was something in his tone of voice which chilled her. She felt that he was annoyed.

"Don't you like it?" she asked abruptly.

"Not particularly. When a man comes home cold and tired, he looks for his arm-chair and his wife's society; but" (visibly softening) "never mind, *you* will enjoy it, I dare say; and you have not many pleasures. Had you consulted me, however, I fear I should have been selfish enough to say *no*."

"How *could* I consult you? You were at the works. I couldn't keep Harry's messenger to send to you."

Then she looked at him and saw how tired and worn he seemed.

"Is anything the matter, dear?"

"Oh! not much, things are not going so well as they might,

though I dare say we shall weather it; but there is one thing I *will* have my way about, the men *shall not* open their lanterns in my pits."

"Have they been doing it again?"

"So I hear by a side wind; but the men will not tell upon each other, so I cannot find out the offenders."

She was generally interested in all that went on in his outer life; but now her eyes were fixed upon her dress, and her hands were wandering hither and thither, fluttering among its folds and trimmings.

He noted it, and turned away.

"You are fond of finery, Eva, like other girls," he said, without much approval in his voice, and left the room.

"Like other girls!" His words grated upon her. How superior he had thought her to other girls she knew. Was his opinion of her changing? No, surely not! He was tired, something had gone wrong at the works. She turned and rang the bell, unfastening her dress the while.

"Bring me some hot water, Mary. I suppose you saw that your master's room was ready?"

"Lor! that I didn't!" the maid confessed; "you generally see to it yourself, and I never thought about it."

"How vexing! didn't you even put the clean towels out, or hot water, or light the fire, and the candles? Oh! Mary, it really is *too* bad of you. Go and see to the things at once—yes, before you fetch my water. I *am so* vexed with you."

But in reality she was more vexed with herself, even though she would not acknowledge the fact. "Mary has really had nothing to do the whole afternoon," she grumbled to herself as she brushed out her long dark hair. "It is altogether *too bad* of her." Her temper recovered as she attired herself in her "finery," as her husband had called it. Every woman likes to see a satisfactory reflection of herself as she looks in her glass, and Eva Philips could hardly have failed to be satisfied with what she saw in hers. She smiled as she put the finishing touch to her dress; then, the smile deepening, she opened a small leather case lined with white satin, and held it to the candle, while its contents emitted a thousand sparks of light.

"They *are* wonderful," she exclaimed. "Perfectly wonderful! How I should love to wear them! but Arthur is so particular, he would not like it, and he is so blunt he would be sure to blurt out the truth before the evening was over." She sighed and closed the case. "I used to have such pretty jewels," she murmured

regretfully, "and now I have none, except these." Again she surveyed herself in the mirror; she had allowed discontent to creep in, and didn't feel half so well pleased at this second inspection. "The ear-rings would make all the difference," she says quite decidedly, and finds herself holding them up beside her ears; in another minute she has clasped them in, and once more she is satisfied. "I won't tell him," she determines, "at any rate not till we come home, then he can't say anything." And, opening the door, she went down with her wrap over her arm.

Her husband was there before her, sitting in that chilly room awaiting her. He had felt the miss of his wife's usual attentions, and had for a time been really vexed; but he had put aside his ill-temper, wondering at himself, that he, who for so many years had lived alone, should now depend upon another for happiness. He looked up at her with a smile as she entered.

"Shall I do?" she asked, without much regard to elegance of language.

"Do! I should think so. Did you make it all yourself, little woman?"

"Every stitch. I had no idea I could till I tried, and I never tried till—till——"

"Till you married *me*; it's the truth, you need not hesitate to say it."

She had not liked to remind him that she had never had to pinch and contrive until she had become his wife; that her old life had been one of luxury, and she stood searching her mind for words to tell him how little she regretted the change, words which should not seem to exalt herself, and make a merit of her sacrifice, when she was startled by her husband's notice of her one article of jewellery.

"Those ear-rings are new, Eva!"

And she had replied, as carelessly as she could: "What if they are?"

For a moment the blood had rushed through her veins; her pulse had struck like an anvil in her temples; her heart had beat fast and thick. She knew what she was about to do—she was going to make her husband angry; she *knew* it, and yet did it wilfully.

She loved him truly; still she meant to have her way, to wear the ear-rings and not to tell him anything about them, at any rate that night. She felt as a soldier who for the first time goes under fire, an involuntary shrinking from the scene before him—a desire to evade the dangers of the position; one moment of heart-

quickening, and then the mind is braced for action; and calmness, even defiance, follows.

"Those ear-rings are brilliants; they must have run into three figures?"

"Well, I did not say they had not!" And a smile lurked about her lips.

"Where did you get them, Eva?"

The question had been asked, and, as we have seen, she had parried it; one unkind speech had begotten another, and Eva was standing, hoping for a tender word to draw her back to her husband.

In her pride she told herself that it *must come from him*—and it did not. He would not speak, so she let her heart grow hard, and her desire for reconciliation died out, anger quickly taking its place. She thought bitterly that he had grown tired of her, that he regretted their union. She had given him the opportunity to tell her that her fears were groundless, and he had passed it by without a word as a subject beneath his notice, or one which he could not deny.

The girl before him, flashing defiance from those usually soft eyes, was the one woman he had loved during his thirty-five years of life. Arthur Philips had not frittered away or enervated his love by flirtations and meaningless sweet nothings; he had thought little about women, until he had met that one who was all to him. He had decided then to try and win her, and he had never once regretted that he had succeeded. He felt himself lowered by his own conduct, and the knowledge was like a lash to him. He who loved truth had not spoken it in its entirety, but he could not acknowledge this to the beautiful virago before him, and certainly not until she had told him what he desired to know about those glittering baubles which he was longing to crush under his feet. And now the thought rushed through his brain that she had accepted them from some other man, and had hidden the fact from him. What could such a concealment mean? With his proud nature, he could not brook that his wife should receive anything from anyone but himself; but that she should accept so valuable a gift and not tell him of it, was more than he could or would bear.

In her retired life there was but one who could have been the donor—Harry Ansley! Stay—were there not two? Might not his mother have given them?

"Eva," he asked, in a low suppressed voice; "if Mrs. Ansley gave you those ear-rings, pray tell me so at once."

He had not spoken that kind word ; he had not been generous in his conduct towards her. He had certainly not treated her with that courtesy which she had, perhaps, a right to expect from him. He had pained her sorely by his want of trust, by his remarks, and she felt a wicked pleasure in the torment she now knew that she was inflicting upon him. He had often laughed at her for wanting to keep him all to herself, for seeking expressions of his love ; had laughed for joy of heart at it, and called her jealous ! Now it was her turn.

"Mrs. Ansley did not give them to me," she answered triumphantly.

At that moment the door opened, and Mary announced :

"Mrs. Ansley's carriage."

Both waited until it had closed again before either spoke. Then he made a last attempt.

"Eva ! *who* gave you those diamonds ? "

It had come to that ! He no longer inquired whence they came, but *who* had been their donor.

"I decline to be browbeaten !" she answered hotly ; "indeed, I decline to reply to any more questions at all. I cannot keep my cousin's horses waiting—I am going."

"Very well—I am *not* ! "

Oh ! how she longed to fling aside her pretty dress, to put on the plain one which she usually wore at home in the evening ; to nestle to his heart as she had so often done, and hear it beat for her ; but she was too proud to acknowledge it, far too proud.

"That is for you to decide, of course," she replied. "I am sorry I do not see my way to break *my* promise to my cousins. Are you sure you won't come ? "

There was a wistful intonation in her voice which arrested his attention, but, perhaps, feeling her own weakness, she had turned from him.

"Quite sure ! "

She glanced back at him as she shut the door. He did not seem to know that the world held her. He had seated himself by the table, had drawn the lamp to his side, had taken a memorandum book from his pocket, and appeared intent upon its pages. A cry escaped from her heart as she flew, rather than walked, down the garden path to the carriage, regardless of the keen wind and the November fog, with nothing to protect her from the coldness of the night air.

"Oh ! Ma'am, where is your cloak ? You will catch cold ! " cried Mary, running after her.

"Never mind—I'm not cold. I don't want a wrap—I can't wait."

"You've got it, Ma'am; do put it on—see! it is over your arm."

"Yes, of course! I forgot; but I don't want it. It is so hot. Leave the window open."

"Isn't master coming?"

"No."

"Then I must shut the window, or you will catch your death."

Mrs. Arthur Philips was not hot, but she felt as if she were choking, and sank back in the comfortable carriage like a log.

"Why had she done it? Why had she been so utterly foolish as to shake her husband's trust in her for such nonsense? Even now, could she not go back to him?"

It was love which thus whispered to her.

"No, no! a thousand times no! He had been as much in the wrong as herself; it was for him to take the first step towards reconciliation."

It was pride which answered; and to pride she listened.

The horses trotted on gaily, proudly tossing their arched necks, and Eva listened to their measured foot-fall with a lead-weighted heart, while a feeling of lethargy crept over her. It was her cousin's voice which roused her, her cousin's hand which clasped hers warmly as the door of the carriage opened.

"Why, where is Philips?" he asked, on finding her alone. "And good heavens! Eva—without a cloak on such a night!" And he looked into her face keenly.

"One question at a time, Cousin Harry, and my dull wits may follow you. Mr. Philips has had a bothering day at the works, and was tired."

"Had I known you would come alone, I would have gone over to fetch you myself," he answered, with a voice which said he condemned his unconscious rival unheard; "and I should at least have seen that you were taken care of."

He led her into the house tenderly. Love's intuition told him something had gone wrong with her, and his heart rose up against it. While he had seen her happy, he had been contented even in the shadows; but now, she was not happy, and he knew it.

"Is anything the matter, Cousin Eva?" he asked, earnestly, before he opened the drawing-room door.

"The matter! why, what should be?"

However unhappy Eva Philips might be, she would not wear

her heart upon her sleeve, even for her kind cousin to inspect; so she broke into a light laugh.

"That question reminds me of old times, Harry. I never could be one bit silent or serious without your thinking I had been ill used." And in another moment she was in the brilliant room.

It was a large party, and Eva allowed herself not one moment for thought. Had Arthur Philips been there he would scarcely have recognised his vivacious wife.

Harry Ansley looked at her in wonder. Never in her youngest girlhood had she been so saucy; never had her eyes sparkled as they did that night, and somehow it grated more upon her cousin to see her so, than her saddest mood could have done.

"Good-bye, Harry," she cried, stepping gaily into the carriage at the close of the evening.

"I am coming with you. I shall see you home."

"No no, please don't; I *am* so tired. I *can't* talk any more!" And there was a sound in her voice as of tears not far off.

"You shall not speak one word. I am tired too, and don't want to talk."

"Why do you wish to see me home?"

"Because I believe you are unwell."

"Who ever heard such nonsense? You always were an old woman, Harry," she said, essaying to laugh.

He followed her into the carriage, wrapping her warmly in her cloak, but did not break upon her silence until the village of Heathgate showed its feeble lights, then he took her cold hand into his own.

"Eva, never forget that I am your cousin, and if ever you want anything, if ever I can serve you, you will let me, will you not?"

She gave him her second hand of her own free will.

"I will indeed, Harry; you are more than a cousin to me. You and your mother are the only relations I have now in all the world."

The carriage stopped and he helped her out. They had been wont to kiss in days gone by, these cousins; but since love had given a fresh meaning to such things for her, she had shrunk from his cousinly salutes. But to-night a great loneliness was upon her, her soul yearned for a word of kindness; and this cousin, who was to her as a brother, had given it. She paused, hesitated, raised her face and kissed him out there in the feeble moonlight.

"You won't come in, Harry?"

"No, not to-night." Then, in a low voice, "God keep you, Eva."

The little gate was shut, and Arthur Philips and his wife once more stood face to face.

How the wind blew! but they heeded it not.

"I hope you have passed a pleasant evening," he said, with an ironical laugh.

"Very, and I reciprocate your wish."

He grasped her wrist in his strong hand and involuntarily hurt her.

"Will you tell me now who gave you those diamonds?"

"No."

"Shall I tell *you*?"

"Certainly; *if you can*."

"Harry Ansley!"

How his words beat upon her heart! Harry Ansley! So that was what he thought! He whom she loved with all her strength believed her untrue to him. The moon gleamed out with a sudden, fitful, sickly light, and showed her face to him, white and drawn with despair.

"She suffers thus for *him*!" he thought, and dug his heel cruelly in the ground. "Great God! and how I love her!"

Again a silence, and only the pain-stricken sobbing of those two hearts. Still looking at the sadness of her face, and at her beauty, a great pity for her touched him. If only she would tell him all the truth, might not he help her, even from herself?"

"Eva, can you deny it? Oh! Will you not confess your sin?"

Her sin! Had he stopped short of that! Her eyes shone like stars, and she answered him slowly and defiantly.

"I shall not condescend to either deny or confess; you can take any course you please."

How cold her words sounded; yet they came from a bleeding heart. She raised her head proudly, and the moon's rays fell upon that apple of discord, those diamonds, and they struck out their beautiful fires as though to mock him. One, only one soft word, and she would kneel to him; she loved this man so deeply. Proud as she was, she would kneel and tell him that no other being in all the world was, or could ever be, aught to her.

"Is that your final decision?" he asked icily.

"It is."

For one long breathing space he gazed at her, then turned, and without one word was gone. She heard his retreating footsteps,

slow and heavy like a funeral march, and her hopes died within her. She heard the little garden-gate shut after him, and his steps fell into silence.

Slowly, with a deep despair settling down upon her, she removed the ear-rings from her ears, and crushed them under her feet into the gravel path; then, as a wounded animal turns to its lair, she bent her steps towards her home. The door stood ajar. He had left it so. All was still within the little cottage. He only had sat up for her. But with what intent? She left the door open; he might return. She struck no light, but sat down in the darkness alone to listen.

* * * * *

But Arthur Philips did not come. The sight of that kiss, upon his excited mind had made it chaos. Generally a man of clear, sound judgment, he now allowed jealous passion to take possession of him. Another time he would have thought but little of the circumstance, and, if he had not approved of it, would have told his wife so with kindness and decision, confident in her desire to follow out his wishes. Now it *proved all* things to him. So he turned his office at the works into his home, and remained there.

All the village soon knew that something was wrong. The report in time reached Fairmead; but Eva refused to see either Mrs. Ansley or her cousin Harry. Life had become a blank to her. She did nothing—nothing but wait for Arthur to come back.

Christmas Eve! and her wedding-day! If ever his heart turned to her, surely it would be to-day, she told herself, and dressed her vases with his favourite Christmas roses, and decked the rooms with holly and mistletoe to greet him. But all the day passed and he never came to her. The world was pure and white, as a Christmas world should be; scarcely a breath stirred the cold, still air. Only *she* knew how she had hoped to see him that day, and an utter sadness oppressed her. Evening had set in. She could bear inaction no longer; and, slipping on a fur-lined cloak, one of *his* many gifts to her, she went out into the night. She touched the fur with a gentle hand, remembering *when* he had given it to her. "A year to-morrow," she whispered, and sped on; her heart full of the joy of the past, and the misery of the present and future, when she heard a step behind her—a man's step—and stood still. A throb of hope, a chill sense of despair, and her cousin was beside her.

"Eva," he said, clasping her hand in both his own, "Eva, do you remember your promise? Surely the time has come when I can help you! It is no secret that some trouble has come between you

and your husband. My dear girl, I pray you to trust me with all the truth, and I do not think I shall fail to bring about a reconciliation."

So she told him all—every word.

Then he led her homewards, begged her to keep up a brave heart, and said he would send her news very shortly—that, night if possible.

"Are you going to the works?" she inquired timidly.

"Yes! I must see Arthur."

"And what are you going to say to him?"

"I am going to tell him he ought to be the happiest man in the world this Christmas Eve, for he has a wife who loves him truly."

Then he turned and looked at her earnestly. "You *do* so love him, Eva, do you not?"

"With all my heart and soul."

She did not understand the wistful expression which crossed her cousin's face at her reply, as he touched her hand gently, and without words went to reconcile her to another man.

Eva could not, however, obey him, she could not remain in the house, but after a while went out and leant against the gate—the gate through which her husband had gone away—the gate through which he was to return.

How long she watched there she never knew. The after fear and agony blotted out time and space. A sound smote upon her ears as of distant thunder. She raised her eyes to the winter sky to find it cloudless; she had known it before, but yet she had looked to satisfy herself. Ten thousand stars glittered in heaven's arch, and stillness wrapped the world. She could hear her own breath come and go, as the loudest sound abroad. Another deep and angry growl—not very near, but carrying a horrible meaning; a mighty roar—then silence.

Lights bursting from every cottage window, opening doors, and women's voices wailing.

The men were not all at the works—some were in their beds, but business was brisk, and both by night and day the pits were filled with workers.

Many there had heard those sounds before, but not so Eva Philips, yet she knew with a certainty what they had meant. She, like others, sped on unheeded: each had husband, friend, brother or child to think of, and gave no thought to her.

A sensation as of an earthquake told of yet another explosion in that black city underground. One cry went up from her heart:

"God save him." In her unspeakable agony there was to her but *one* in that terrible danger—the rest were forgotten.

"Keep back! it is not safe!" and rough but kindly hands held her from advancing into the midst of the scene of danger and confusion before her.

"I am Mrs. Philips—the master's wife—let me go to him," she pleaded.

"Poor lass! but you can't; he is down in the pit."

"Down in the pit! God help him!"

"Ay, that's it, mistress—he *would* go; he said the men's lives were worth more than his; he is a noble man!"

It was the foreman who was speaking to her. She covered her white face with her hands, and waited. She appeared to have forgotten her cousin and his mission, for she made no inquiry for his safety.

How she trembled, as amid violent excitement the cage came slowly up laden with the dead and dying. Sometimes a piercing shriek rent the night air, and told that some dear one had been recognized, and now must be mourned; but for the most part the grief was still and deep—almost sullen. Women sat upon the ground, their hands tightly clasping their knees, awaiting their fate with straining eyes; their sympathy for each other shown only by a "God help you!" as some dear one of another came to view.

Every man had been brought up, dead or alive; only the master was left behind. Once more a strain upon the ropes, a murmur of hoarse voices, and again the cage came up more quickly, this time being lightly laden. A suppressed cheer greeted it, as hearty as the heavy hearts of the men could make it.

"He's coming now, ma'am," whispered the foreman.

Eva covered her face with her hands, afraid to look; not knowing what might meet her vision, she struggled forward with a bitter cry, the world swam beneath her feet, the sound as of ocean waves encompassed her. The cheering came deeper and more warmly, "Safe! Safe!"

Another had come up in the cage as well as Arthur Philips—Harry Ansley. He had been in the solitary den which was Arthur's abode, and had made peace between the man and his wife, and was just leading him home in triumph, when the first explosion had taken place, and both had gone into the pits to render what help they could to the sufferers.

Christmas morning was breaking red and fair when the trio reached the little cottage at Heathgate which was Eva's home.

She let her cousin pass in, and stopped just where she and her husband had parted a month before in anger. The sun was lighting up her face with a heavenly radiance.

"Arthur," she said, "forgive me, I was in the wrong."

From a church tower far away the chimes came to them faint and low, falling and rising in the morning air.

"We were both to blame," he answered gently, and drew her into his arms.

With a happy smile she slid from his embrace. In the gravel at her feet she had seen the cause of their dispute. She dug out the fragments and held them up before his eyes.

"I wonder if any two, who love, ever parted about such an unimportant thing as *a pair of five shilling paste ear-rings*?" she queried with a happy laugh.

"My wife! why did you not tell me they were paste?"

"Simply because you are such an austere old dear, and denounce all shams so lustily, that I thought you would not let me wear them, or that you would honestly blurt out to all my little world their lack of value."

"But when you found the subject was becoming serious, my pet?"

"Ah! then it was too late—pride had got the upper hand."

"And now?"

"Love has it."



“On Leave.”

THE Duke and Duchess of Connaught, attended by one aide-de-camp, are expected to embark for India at Marseilles, on the 8th of next month. His Royal Highness, who is very popular in India, has with excellent taste arranged with the Indian Government that an officer of the Indian army shall be appointed his equerry. The command of the Punjab Frontier Force, it is believed, will be given to His Royal Highness. The Punjab Frontier Force, the administration of which has hitherto been vested in the Government of the Punjab, has been, with the sanction of Her Majesty's Government, transferred to the command of His Excellency the Commander-in-Chief in India. The Governor-General in Council, referring to the change, “takes this opportunity to place on record his appreciation of the admirable manner in which the force has for so many years been administered by the Punjab Government . . . In arranging the details of this change of control, the political exigencies of the frontier have been kept prominently in view, and every effort has been and will be made to interfere as little as possible with the present system of frontier administration. The force will, therefore, continue as a separate unit for frontier duties, and, as far as may be practicable, its local and distinctive character will be preserved, its institutions maintained, and its existing privileges continued. The transfer will take place from 1st August 1886, and His Excellency the Viceroy and Governor-General in Council is confident that all ranks of the force, British and native, under the command of His Excellency the Commander-in-Chief in India, will spare no efforts to worthily uphold the traditions of loyalty, discipline, and bravery which have been handed down to them, and to maintain unimpaired the *esprit de corps*, efficiency, and soldierly qualities which have gained for the Punjab Frontier Force power and distinction both in cantonments and in the field, and have raised this fine body of troops to the distinguished position of a fighting force second to none in the army.” The Punjab Frontier Force is composed of five

regiments of cavalry, the Corps of Guides, five mountain batteries, four regiments of Sikh infantry, six regiments of Punjab infantry, and the Hazara Goorka battalion. Should the Duke of Connaught obtain this command, the news will be received by these distinguished corps with the highest possible pleasure.

The speech of Lord Salisbury at the Mansion House has given unqualified satisfaction. In speaking of the late attempted disruption, His Lordship said: "Other Governments may yield to terror; monarchs, oligarchs, may change their opinions under the pressure of fear that popular feeling evokes; but the masses of men themselves are never moved by fear, and you may be quite certain, unless our race has lost all its spirit and all its fibre, that this decision, after long reflection deliberately given, is the final verdict of the English people." The new Ministry, it is anticipated, will work well together, and the appointments of First Lord of the Admiralty and Secretary of War have the confidence of the country.

The judgment pronounced by Lord Coleridge and Mr. Justice Denman to restrain *The Admiralty and Horse Guards Gazette* from publishing alleged libels, pending the trial of an action, has given unqualified dissatisfaction; although it should be noted that both these eminent judges regarded the case from a patriotic point of view, the Lord Chief Justice remarking, "Are we to place a restriction on the publication of a matter which affects the whole defence of the country?" And Mr. Justice Denman said: "If these charges are true, the nation is being irretrievably injured." In the meantime, further "ring intelligence" will, no doubt, be published, which, when the action comes on, will either strengthen or damage one side or the other.

The Maxwell gun is, I learn, now finished and perfected. There will shortly be a Government trial, and, from what I hear, it is likely to rival, if not surpass, the other machine-guns, especially in quickness of action.

Sir Frederick Roberts has just issued a General Order for the better treatment of both young and old soldiers. His Excellency states that he has been much struck by the frequent courts-martial on the younger soldiers of the British service, and by the disproportionate number of these lads to be met with in every military prison; and on inquiring into the causes which have brought the majority of these prisoners into trouble, he is unable to resist the impression that many of them might be doing their duty with credit in the ranks "if more consideration had been shown to them in the earlier part of their career." Sir Frederick Roberts, in

attempting to inaugurate a better way of dealing with the young soldier, recognises that discipline is essential to the very existence of the army, and that unless crime is punished as it deserves, the worst consequences must be expected. Sir Frederick Roberts "would only urge that during the first two or three years of a soldier's service, every allowance should be made for youth and inexperience, and that throughout that time crime should, whenever practicable, be dealt with summarily, and not visited with the heavier punishment of a court-martial sentence." Such views commend themselves for their humanity and common sense, and will not only be highly appreciated by those who have enlisted, but will popularise the army and bring in additional recruits. In the treatment of the older soldier, Sir Frederick Roberts would have more indulgences granted to them, more freedom of action allowed to them. A later hour for tattoo, for keeping open the recreation rooms, excused attendance from roll-calls, and "the fullest indulgence in the grant of passes consistent with the requirements of health, duty, and discipline." Of course, so wide a departure from old standing regulations has made "old Square-toes," and many other red-tapeists in the army, look upon such a plan with horror, and regard such a procedure as in the highest degree dangerous. The Indian Commander-in-Chief holds a different opinion, and declares that the corps in which indulgences are freely given show the largest number of well-behaved men. Such indulgences he maintains, are seldom abused; and not only are they appreciated by the recipients, but they act as an incentive to the less well-conducted to redeem their characters. In Madras, the experiment succeeded, and the relaxations suggested have been found to work well, and have been permanently adopted there. Sir Frederick Roberts now wishes that a trial be made of granting these indulgences in every corps under his command. Admitting that the experiment is a bold one, it must be borne in mind that the soldier of the present day is better educated; he can, if he chooses, ply his trade, and, with the short-service system, considers himself both a soldier and a citizen. Sir Frederick Roberts, who has a thorough knowledge of soldier character, believes that granting these indulgences will be attended with the happiest results—a hope that everyone who has the interest of the army at heart will re-echo.

The Military Flying Column which started on Monday the 17th for a march of five days, in order to test the regulation equipment for troops of all arms on service, has given rise to much speculation. The troops were all in heavy marching order—that

is, the infantry carrying their valises, mess-tins, havresacks, water-bottles, and a full supply of ball-cartridges, the whole weighing some *sixty pounds*. The cavalry, all Scots Greys, turned out in fine condition, each man carrying before and behind him an amount of camp-kit and horse-necessaries which must add materially to the weight of man and arms. The men of the Rifle Brigade appeared to have quite as much as they could carry, and were thought by many to be over-equipped. The importance of bringing men into action fit and well can hardly be over-estimated. Koer Singh—the father of Duleep Singh—the lion-hearted chief of the Punjab, was so struck with the appearance and fighting qualities of the British soldier, that he is reported to have said, "I would carry every British soldier on to the field of battle in a palkee." Whether with sixty pounds of baggage to carry, the British soldier, at the end of a twenty-mile march, will be in fighting condition, is a question the organisers of the Military Flying Column will, I hope, be able satisfactorily to answer when they issue their report.

Notwithstanding that we are at the end of the season, there are plenty of amusements going on. It was only the other night *Erminie* was withdrawn in the very height of its success. This comic opera was so admirably performed that I hope it will be played again before the Colonials leave. The cast had been considerably strengthened; the fair proprietress, Miss Melnotte, playing Javotte with spirit and buoyancy; Miss Florence St. John taking the part of the heroine, and singing, if possible, more delightfully than ever. The character of Delauny, a young officer, obtained unusual prominence by the finished performance of Miss Kate Everleigh. This young lady has acquired a great reputation in Liverpool on account of her clever delineation of boys' parts, and certainly her soldier-like bearing and bright acting in *Erminie* confirms the reputation she has obtained there. It is to be hoped that London will secure the services of this talented young lady for one of the Christmas pieces, though I fear Liverpool will scarcely agree to the suggested change. Mr. Paulton and Mr. Wyatt acted and sang with all their old spirit and humour. "The thieves' duet" was admirably sung.

The Compton Comedy Company have made their welcome appearance again in London. Mr. Edward Compton has opened with "Garriek," and a better selection could hardly have been made. Mr. Compton plays Garriek in admirable style. In the second act the drunken scene is a masterly and finished per-

formance, free from exaggeration or mannerism. The bearing of Mr. Compton throughout this scene was dignified. The gentleman always stood before you, and when Violet requests him to retire—knowing her admiration for him—his fancy is inflamed, his ambition roused, and he delivers, before leaving, three short speeches from Shakespeare that fairly won the sympathies of the house by his splendid elocution. The applause was mingled with cheers of that spontaneous character which evidenced in an unmistakable manner the delight of the audience. Mr. Compton was recalled twice. Miss Virginia Bateman (Mrs. Compton) plays Violet with much lady-like refinement and repose. This quiet bearing admirably conveys the idea of a modest English young lady, a character in the present day of high-heeled boots and flippancy seldom met with on the stage and not always off. The veteran, Mr. Lewis Ball, plays Alderman Gresham excellently, and all the other characters are well acted. The piece is capitally mounted, and everything evidences the care and personal superintendence of Mr. Edward Compton.

All real lovers of music are delighted to find that Mr. W. Freeman Thomas has again opened Covent Garden for a series of promenade concerts, on the plan which he has worked so successfully for several seasons past. The opening night went off remarkably well. Mr. Carrodus is solo violinist and *chef d'attaque*, and Mr. A. Gwyllym Crowe once more occupies the position he filled so worthily in former seasons, which is an assurance that the pieces will be presented in a manner well calculated to please a critical audience. The solo vocalists who appeared on the opening night were Madame Hélène Crosmond, Madame Antoinette Sterling, and Signor Foli, and these artistes met with a most cordial reception. The instrumental solos were supplied by Mr. Carrodus, Mr. J. Radcliff, and Mr. Howard Reynolds. The audience was most enthusiastic throughout. Mr. Gwyllym Crowe carried off the chief honours with his new chorus waltz, entitled "Little Sailors," which was sung by Mr. Steadman's choir in neat nautical costumes. There is considerable variety in the music of this waltz, the most prominent parts of which seem to possess all the swing and melody necessary to such a composition. The popularity of this waltz will equal, if not surpass, its predecessor, "See-Saw." The programme is changed nightly, and many pleasant evenings may be spent at the Promenade Concerts.

Reviews.

EDINBURGH IN THE DAYS OF OUR GRANDFATHERS. By JAMES GOWANS. London: John C. Nimmo.

The strikingly artistic cover of this beautiful work attracts the military reader at once by the coloured figures representing the dress of the army "in the days of our grandfathers." The book contains a choice selection of eighty of Shepherd's famous views of Edinburgh and its neighbourhood, as they appeared in 1830, with historical and descriptive sketches by James Gowans. Probably no city in Europe offers to the lover of picturesque scenery a more interesting series of subjects for the pencil than Edinburgh, and in these sketches every favourite feature of the grand old city is reproduced with all the skill of the artist and engraver. The way in which the book is got up is in every respect worthy of the art-printer, and to the many who are visiting Edinburgh this year to see its Exhibition we could give no better advice than to secure this luxurious souvenir of Mr. Gowans.

SKETCHES IN THE SOUDAN. By Captain WILLOUGHBY VERNER. London: R. H. Porter.

We are glad to note that Captain Verner's admirable *Sketches in the Soudan* has passed into a second edition. The oblong work replete with well-reproduced chromolithographed drawings, makes an admirable table book, as well as a charming history of the war. Captain Verner apologises for the difficulty of reproducing his sketches, but we do not find one that detracts from the general merits of the volume, while some of them, such as "Water at Last," and "Dawn," are really superb. The accompanying letterpress is concisely and judiciously written, and yet is full of valuable information. Altogether the volume is one of which Captain Verner may be proud, and the army, in turn, of Captain Verner, and we trust that it will not be the last production of the kind from his clever pen and pencil.

MILITARY LIFE IN ALGERIA. By the COMTE DE CASTELLANE.
London: Messrs. Remington & Co.

Margaret Josephine Lovett has translated in an excellent manner the *Souvenirs de la Vie militaire en Afrique* of the second son of the famous Marshal de Castellane, which form two well-printed volumes, embellished with a capital map of North Africa. The Count gives a most graphic account of the campaigns attending the conquest and pacification of Algeria; and if his souvenirs do not profess to an exhaustive military history, they embody a large amount of valuable information, and contain many hints that the careful reader will readily avail himself of. Among the heroes who figure in the volume are Changarnier, Canrobert, St. Arnaud, Fleury, MacMahon, and others. Writing in a lively style, he is never dull; and if here and there the narrative requires to be taken *cum grano salis*, the reader is able to administer the pinch of salt without feeling angry with the author.

REGIMENTAL DUTIES FOR THE RANK OF MAJOR. By Lieut.-Col.
J. MILLAR BANNATYNE. Glasgow: James Maclehose & Sons.

This is the second part of the *Guide to the Examinations for Promotion in the Infantry*, and contains questions and answers on the regimental duties for the rank of Major. We are glad to note that so excellent a work has passed into the fifteenth edition, and wish it continued prosperity.

WHAT IS TO BE DONE? By NIKOLAI TCHERNISHEVSKY. New
York: Messrs. T. Y. Crowell & Co.

There is scarcely a single political trial in Russia, out of the hundreds that have been held since 1872, in which a reference has not been made to Tchernishevsky's revolutionary novel, *Tche Dailet*? It caused an enormous sensation in Russia when it first appeared, the author suffered martyrdom for it by being exiled to Siberia, and there he had the melancholy fate of being joined by hundreds of exiles who had been impelled to plot against Autocracy by *What's to be done*? Such a work—the Marseillaise of novel literature—ought to have been done into English long ago, and, considering England's avowed interest in Russian politics, it is a reflection upon her literary enterprise that it should have appeared first in New York instead of in London. The translators, Messrs. Dole and Skidelsky, have translated the book in a manner that leaves nothing to be desired; and the history of the work, inserted as a preface, is full of melancholy interest. To the many

military men who are now learning Russ, we readily recommend, not only this book, but the rest of the series of Russian translations, including Gogol's *Taras Bulba* and Tolstor's *Anna Karenina*, which Messrs. Crowell & Co. are issuing in rapid succession.

SHOOTING. By LORD WALSLINGHAM and SIR RALPH PAYNE GALLWEY. London : Messrs. Longmans, Green, & Co.

The two new volumes of the Badminton Library are devoted to shooting "in field and covert" and "on moor and marsh." Type, paper, binding, and illustrations are admirable, the latter particularly so, being not only drawn by some of the best artists of the day, but engraved in a style that is far too rare now-a-days. The first volume contains chapters devoted to shooting past and present, a short history of gun-making, the price and choice of a gun, shooters, keepers, and dogs, partridge, pheasant, rabbit, and pigeon shooting, &c., while the second deals with grouse, black game, deer-stalking, wildfowl-shooting, punting, and a little plain law for game preservers, keepers, and poachers. With regard to the remarks on guns, we are bound to express our conviction that the Grant grip action, patented by Messrs. J. and W. Tolley, is superior in point of strength and durability to the Greener bolt, and is less likely to get out of order. As for the sweeping condemnation of "Birmingham makers," we would ask whether it is not a fact that most of the London firms have factories at Birmingham, or buy of the makers there? Apart from an occasional display of bias of this kind, the book is singularly free from defects, and we may say, with truth, that to describe it as the best on shooting extant is by no means too high praise for a work which every sportsman should possess, and which even those whose opportunities for sport are limited will read with relish.

ARMY SOCIETY. By JOHN STRANGE WINTER. London : J. V. White & Co.

Few authors have made such rapid progress as the author of *Bootle's Baby*, who in two or three years has turned out quite a library of Books, all more or less successful, descriptive of army life. The present volume, which has deservedly passed into a second edition, is a story of life in a garrison town. To military men it is unnecessary to indicate the characters likely to appear in such a story; but they will find on Mr. Winter's platform familiar types, playing their parts in a humorous manner,

and leaving the audience at the end of the performance delighted with the skill of the author.

THE NEW PRINT.

From Messrs Tooth & Sons we have received what has been pronounced by experts as one of the best photogravures of the season. It is a full-sized print entitled "A Spate in the Highlands," after the picture by Peter Graham, R.A., in the possession of the Queen; and embodies some of the most striking features of Highland scenery. In its general effect it compels the attention of the observer, and one cannot examine it in detail without finding much to admire in the masterly rendering of the elements. The originality and force of the artist were never better brought out by the photogravure process than in this instance, and we cordially recommend it to the attention of all readers desirous of securing a really artistic and effective print.

Messrs. Fores forward three new sporting sketches, two humorously describing the life of the "sporting undergrad" at Oxford and Cambridge, and the other belonging to Fores's hunting incident series. The latter, entitled a "Breast High Scent," is from the picture by F. Cecil Boulton, and shows in a graphic and animated manner a pack of hounds crossing a road in front of a tandem. The colouring of the plate is excellent.

We have also received a *Guide to Court-Martial Procedure* by Lieut. Morrison (Chatham: Gale and Polden); the *Elements of Battalion Drill*, by J. Buckley (Aldershot: J. May); and a well-compiled little pocket-book and sheet of *Regulations for Guards and Sentries*, by Sergeant-Major J. McMillen (Kingston-on-Thames: M. A. Knapp).

TO CORRESPONDENTS.

All MSS. intended for insertion must be directed to the Editors, Army and Navy Magazine, 13, Waterloo Place, London, S.W., and must contain name and address of the writer. Name and address on letters is insufficient.

It is requested that ruled paper be used, the pages numbered, fastened together, and a small margin left.

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Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.

THE ARMY AND NAVY MAGAZINE.

OCTOBER 1886.

The Nation in Arms.

FROM THE GERMAN OF LIEUT.-COL. BARON VON DER GOLTZ.

(Continued from page 427.)

THE thorough organisation of the defensive power of civilised nations is also a hindrance to raids. Even when the armies have already marched away, with a little preparation squadrons of horse can, in thickly populated districts, be successfully repulsed by levies. The French Franktireurs in the western departments attacked our cavalry, as soon as they saw it isolated.

In such enterprises on the theatres of war, small boldly-led detachments will, by cunning and celerity, sooner attain their object than will great masses by force. It is only the daring, enterprising spirit of the American horsemen that we can take as a pattern; the manner of carrying it out must, upon European soil, be quite different.

Our horse carries, for the most part, a good weapon. In 1870 it was not without such; for in quick determination it took up the chassepot rifle whenever it needed it. But now-a-days it has been properly trained for the use of the rifle and for fighting on foot; it has thus gained in independence.

It can not only defend itself better against surprises, more easily hold in check, and more readily deceive* the enemy than formerly, but it is, before all things, more capable of a vigorous advance. If too much is not expected of its fighting powers on foot, because a cavalry regiment, when it dismounts, is at best only a small body of infantry, and if the cavalry also does not forget that its proper place is in the saddle, the intelligence and concealing

* That is, make the enemy believe in the presence of infantry.

service will be the gainer. This advantage, let us hope, keeps equal pace with the increase of difficulties that has taken place in the last decade.

The saying of Frederic the Great "*In war a good cavalry makes you master of the campaign,*" has lost its importance, in so far as the rôle played by cavalry in battle has diminished. *But even now an efficient and numerous cavalry is the best means of controlling movements.* As in certain games where the player who has the first move has the advantage, so will a like advantage in war accrue to him whose cavalry shows itself superior to the other, and who, consequently, more quickly finds his whereabouts, is sooner ready with his decision, and opens the operations.

But the cavalry must not be merely efficient, it must also be well handled by the supreme authorities. They are responsible for many mistakes which are laid at the door of the cavalry. But the latter must be allowed the proper amount of liberty of action, and yet the cavalry divisions must not be let out of the commander-in-chief's hand. Whilst the masses of horse were in former times kept back, in order to be employed as reserves, or for following up the enemy, there is evinced, in these days, a tendency to send them at once, on the first day, far ahead in some direction or another. This may, again, produce the bad result that a need may arise for this arm after it has been already disposed of. In the sending ahead of divisions of horse, and in the choice of the direction in which they are to be despatched, a definite object must be kept in view. And the commander-in-chief must not only himself know what he intends to attain in this case, but must also communicate it, with perfect clearness, to the cavalry.

The successes of the intelligence-duty are very dependent upon the character of the commands issued. The command so often given, that the cavalry shall advance in order to discover the strength and position of the enemy, is perfectly useless; for this order only denotes the natural duty of the arm. If, as often happens, it is instructed to discover the intentions of the enemy, the commander, as a matter of fact, demands of it that it shall perform a task which is really incumbent upon him. In both cases there is expressed a certain helplessness in the command, and this will entail uncertainty in carrying out the order. It is wisest simply to leave to the cavalry the questions which it is most desirable for the commander-in-chief at the moment to have answered; viz. whether here or there enemy's camps can be discovered, whether here or there towns are occupied, whether the

vanguards or the masses of the enemy's troops have reached a given line, whether on a given railway or road troops are being transported or are on the march, &c. Such commissions, which cannot be misunderstood, will bring in clear reports, and from these the commander-in-chief can make his own picture of the strength and position of the enemy, and guess his intentions. An important medium of news are skirmishes and battles. Both sides come into protracted contact with each other and feel each other. Frequently the sole object of fighting is to obtain information, though this practice is very seldom justifiable. The advantage is, of course, pre-eminently on the side of the victor, because he remains master of the field, upon which he finds abundant means for perfecting his knowledge of the enemy. The uniforms of dead or wounded soldiers inform him what divisions he has before him; reports, note-books, papers of all sorts are found on the corpses, and sometimes even a correspondence-carriage is captured. In short, a battle gives, as a rule, information as to the parts of the enemy's army that have been immediately engaged.

In some cases this information goes further. A letter of recommendation from Gambetta, which the Irish adventurer Captain Ogilvy, who was shot on the 27th November 1870, carried on him, gave the *ober-commando* of the IIInd German army a very valuable intimation of the next intentions of the Government of National Defence, which at that time, as is well known, planned an advance upon Fontainebleau for the relief of Paris. Of course for such freaks of fortune a fight offers more scope than marches and operations do.

But frequently the result of the fight is, in respect of the information obtained, far beneath expectations. The enemy's troops, after the end of the battle, disappear from view, and that thread of sufficient knowledge of the enemy, that has been spun with difficulty up to that time, is broken. The reason lies, as has been already hinted, in the fact that the fight engrosses all attention, and fetters all the senses of those engaged in it. And those, too, who do not engage in it allow themselves to be too much influenced by its issue, instead of unswervingly going their own way. Even though the main body of an advancing cavalry division be repulsed by a more powerful opponent, it is not at all necessary that the whole chain of its patrols should retire with it. For the latter this is precisely the best time for seeing, now that the battle is occupying the attention of the enemy.

The activity of scouts may, during the period of the prepara-

tions for war, be of service, when the ordinary channels of correspondence are still open, and where, not as is the case during the battles, momentary information is not imperative. For operations, engagements, and battles, it is only the latest intelligence that is of value, and a spy is not capable of furnishing this. He lacks the possibility of corresponding by telegraph with the party whom he serves. In order to make personal communications, he must make cautious detours; and he will in almost every case come too late. Only when the war comes to a standstill, as in sieges, battles, and before strong positions, can he play such a part as formerly, when the rules of the art enjoined that a respectable man be gained over in the enemy's country, a clever spy given him as coachman or servant, and the latter thus pushed forward into the enemy's camp. Such roundabout measures are in the present day seldom of use. As a key to the position of the enemy, to the feeling of the people, the army, of influential personages, the state of preparedness, the finances, &c., the detailed reports of cautious spies may from time to time be very welcome. But only very rarely can persons of the proper degree of education be found for this equivocal service. Such persons will, moreover, be frequently obliged, for the sake of their own security, to enter into relations with both belligerent parties. Whilst we receive intelligence from them, we make it also accessible to the enemy.

That the spy of romance, who on the evening preceding the battle arrives on a foam-covered horse in order to deliver to the commander-in-chief the "plan" of his opponent to a nicety, is only a romantic figure, needs no further discussion, since we have learnt to know the nature of "plans" in war. An important medium for the intelligence department is moreover the *press*, not only the great, but the petty local press. Of course even the best informed paper will neither be able nor willing to make known the position of its party in all entirety.

But even here what is worth knowing is composed of numerous petty details. Other flashes of light have often so far lit up the picture of the enemy's doings, that only a breath of wind is still wanting to tear asunder the thin enshrouding veil of mist. The presence of a high commander is mentioned, a letter published, in which the writer mentions a division of troops and its station, or narrates a deed of arms, exactly describing all the circumstances, the regiments, and commanders. Each detail by itself is perfectly unprejudicial, but may yet serve as a valuable link of a chain that at last leads to its aim. Add hereto a confiscation of letters, the stories of prisoners-of-war, the state-

ments made by countrymen or travellers, and exact and important conclusions are possible. The national press cannot in war-time be sufficiently warned to caution. The need of news must be decidedly disregarded from its disastrous effects, much as on the other hand it must, in consideration of the feeling of the country, be treated with regard. It would be better to entrust reliable persons with the spreading of the news that is worth knowing in the country, than by attempting to close all sources of communication to incite unqualified and unreliable persons to independent action.* King Frederick himself once acted as reporter of his head-quarters, and Scharnhorst proposed a special war-journal for the ventilation of distinguished cases of bravery, and of war reports of different sorts, as being a very useful remedy. It is, at all events, not sufficient to regard the press with mistrust, but it is necessary also to direct their activity into the proper channels.

International intercourse has from all time known, even in time of war, how to find its ways. The power of commercial interests cannot be under-estimated. A saying, which is not flattering for us Germans, is to the effect that a German does everything for love of money. But among other peoples it is no less the case. The prospect of gain helps over many a difficulty that otherwise appears insurmountable. Napoleon, who was perfectly well alive to the fact that the commercial world has always good intelligence, before the war, on 3rd September 1806, ordered Marshal Berthier to have all the letters coming from Russia opened in Augsburg and Nuremberg, in order to find out what was going on there. The telegraph facilitates, of course, all communications in a manner never dreamt of formerly; it neutralizes almost completely the dilatory effect of by-paths. General von Manteuffel, on the 1st February 1871, was still engaged in a hot action with the rear-guard of the army of the East that had retreated by Pontarlier into the high Jura. On the morning of the same day a telegram was despatched from Berne to the Minister of the Confederation in Berlin, with the intelligence of the army having passed on to Swiss territory. It was forwarded to La Barre, near Dampierre,† where had hitherto been the head-quarters of the General von Manteuffel; was sent on thence over slippery mountain-roads twelve miles by relays into his new head-quarters at

* Oberst Blume, *Strategie*, p. 126. "The best means of being as far as possible just to conflicting interests, is shown in the regular publication by the army authorities of the war intelligence which cannot be kept secret from the enemy."

† South-west of Besançon.

Pontarlier, and arrived there in the night of the 2nd of February. It was the first formal confirmation of the fact that the enemy gave up the struggle, after the mountain valleys had re-echoed into the gloom of night with salvoes from rifles and the dull roll of artillery-fire.

Quite as quickly much intelligence has reached the scene of the war through the medium of the neighbouring countries. *Embassies, agencies in foreign countries* far from the theatre of war, can thus do the Fatherland good service. The international telegraphic communications must be carefully supervised. Upon the scene of the war, even the telegraphic communications of the enemy have, under certain circumstances, been made use of. During the campaign on the Loire, it was concluded, from certain signs, that apparatuses had been fitted by French Engineers to the German wires, and that messages were being read. Shortly afterwards the same mode was successfully tried by the Germans. The more artificial modes of procuring intelligence, reconnoitring in balloons, and balloon-post, mirror telegraph, subterranean wires, pigeon or dog post, communications by means of bottles, consigned to running water,* &c., belong rather to the province of fortress warfare than to that of war in the field. The latter will always, in the future, be too volatile to allow much scope to such methods. Only where there is a pause and a stop in the operations, is there a possibility that they can be applied.

Of an importance not to be under-estimated is the *organisation of the military reporter system within one's own army*. The case may occur, that the sum of all the information existing in the troops is perfectly sufficient for giving a picture of the enemy, but that the commander-in-chief, all the same, lacks the necessary intelligence.

To begin with, it is difficult for the lower commanders who find themselves opposed to the enemy, to decide whether what they observe is of importance to the higher authorities. And then the officer of a lower rank often has an enormous conception of the omniscience of the commander-in-chief, and erroneously believes that the former must be already acquainted from other sources with that which he can announce. Upon a person not directly entrusted with the duty of giving intelligence, a certain modesty, and the fear of being suspected of a false ambition, will have a deterrent effect. Besides, everyone is sufficiently busied with himself and his own professional sphere. He turns the news which

* By this means, as is known, Metz endeavoured to open communication with Thionville, which lies further down the Moselle.

comes to him primarily to account for this latter, and readily forgets to communicate it further. The hotter the crisis, the fewer the reports; because leading personages lack the time to examine them. Cases are not rare in military history of a high commander eagerly awaiting news from his generals, these latter being in possession of the wished-for intelligence, and yet the forwarding of it is not effected. *It may be laid down as a rule, that each and every commander must himself provide for the intelligence that he needs.* Hereby it is not meant that each one shall on his own account send patrols and officers to keep touch of the enemy. No; rather the information that others have procured must be thoroughly utilised. But the connection between all separate parts must be carefully organised and kept going. The commander-in-chief must continually send officers from his staff to the army corps, and these latter, again, have their organs in the advance-guard, the vedettes, and in the cavalry that has been sent in advance. It is essential that these messengers themselves shall be in no way occupied with the duty of leading troops, and shall be able to give themselves up entirely to the task of reporting. It has already been mentioned that it is necessary to entrust an officer in head-quarters with arranging this branch, in order that the machine may not cease to work at the moment when both commander-in-chief and chief of the General Staff are engrossed by the doubts that so mightily beset them. As a rule, success is not attained by the fortunate arrival of sundry very minute pieces of intelligence, but by the careful utilisation of many.

That considerable labour is entailed by the sifting and compiling of the material, as well as by the forming of a preliminary criticism of it, is self-evident. Nuggets of gold are generally found under heaps of sand. The intelligence system demands extraordinary industry. When many thousand letters written on tiny scraps of tissue paper fell, with the capture of the balloon posts, into the hands of the investing army before Metz, it appeared at first sight as if there were nothing of value to find in them. They had apparently, all of them, before being sent off, passed an official examination. But when they had at length been sorted, when the names, as well as the addressees of the senders, which were given, were compared, a fairly clear picture was afforded of the disposition of the enemy's camps within the forts, and many valuable conclusions were drawn as to the frame of mind of the beleaguered.

Criticism must not merely investigate actual correctness, but

must also assign to intelligence of various sorts their proper place. The knowledge gained in time of peace is continued at first by the reports of ministers and consuls. Then these are broken off. Newspapers and notices of all sorts take their place. Spies give reports as to the feeling in the country, and give farther intimation of the intentions of the enemy, in which what they have heard is wont to be mixed with inventions of their own. The reports of the troops, especially the cavalry, however, first supply the necessary basis to the results otherwise obtained. They exercise the right of confirmation, and make what has been hitherto obtained credible.

Yet the most difficult thing still remains to be done. That is *the turning to account of the information*. Military history, as a rule, only preserves to us things that have afterwards become important; and if they be read free from the confusion that surrounded them at the moment of action, it often appears inconceivable how an error could possibly have been made. But one must present to one's mind the clothing of falsehood, confusion, and inexactness with which it is covered, in order to understand how difficult it is to find out the right thing. The commander-in-chief, if he will base his own decision upon the confusion of intelligence, must generally be guided by the law of probability; and in the case of the enemy, too, he must pre-suppose judicious action. But too rigid adherence to internal probability and an obstinate disregard of opposite hints easily lead again to preconceived opinions and fatal errors. How often does not the improbable occur in war! Therefore, when unequivocal signs repeat themselves, they ought to be considered possible and not be lost sight of, nay, even believed in. On the one side, accordingly, firmness, and on the other elasticity of conviction, is necessary, without there being any fixed rules for the intervention of crises.

The general in command must, before all else, form his own conviction, and remain by it, until doubts arising from certain contrary signs are victorious, *i.e.* create a better conviction. The national peculiarities of the enemy, the personality of their commander, the feeling of the moment, which may be supposed to exist in the opposite ranks—all these are things which must be taken into consideration; they are of influence. A thousand matters must be duly considered, and yet one must not waver long. It is neither right to believe too readily nor to mistrust too optimately. The capabilities of the fancy, which must complete the picture by corner points and lines, as well as the psychological acuteness, which fathoms human peculiarities, are besides neces-

sary to professional knowledge and experience. As the physician makes his diagnosis not from certain symptoms, but from the general physical and mental condition of the patient, so must the general also understand how to gain his opinion of the enemy from the totality of all signs. Prominent talents for it are inborn. Practice can only sharpen the view, not create it.

6.—*Marches, Journeys, and Quarters.*

"When we march along o'er hill and dale in the winding lane of the wood, with loose extended ranks, and music and song fills the air, my heart becomes larger, and I am rich in joyous hopes and anticipations It is, in truth, quite an æsthetic impression that is caused by the march-past of a martial host; but only one must not think of our parades. In the former case it is not, as in the latter, stiff lines of troops that present themselves to the eye, but in these open ranks the individual is discerned in all his peculiarity; and, beside the quietly progressing motion, there prevails much diversity and expression of life. Each individual gleams with his accoutrements through the green boughs of the young wood, and even when the man has disappeared from view, his arms still glance through the cloud of dust which rises high above the verge of the valley, and announces to those afar the approach of a hidden army. Even the toil which the exertion proclaims when the ranks, with their guns and baggage, slowly mount the hill, throws a happy trait into the picture. The number of individuals that even a small company of soldiers presents to the eye, bound together to a long, tiresome, common journey, in order at length to arrive at the scene of countless perils, the great and holy aim, which one and all follow, lends to this picture, in my mind, an importance that deeply affects me."

Thus does Clausewitz, in one of his letters dating from his youthful years, describe the march into the field of battle; and every soul that is able to feel with him, will feel the inner truth of this interesting sketch. The elevating impression which the gleaming columns make, when they, to the rushing sounds of music, pass through stirring towns, and the inhabitants rush to the windows, whilst the curious crowd collects in the streets and hails with loud shouts of triumph the passing soldiery, cannot fail to impress itself upon even a less poetic mind than Clausewitz's. The love of wandering awakes in the human breast, and the new countries, which one learns to know, excite the fancy. In youthful years we all of us gladly change scenes and modes of life.

But the exhilarating moments are, in a day's march, but rare interruptions, and one more readily enjoys them when riding on a good steed by the side of a column, than when labouring along on foot in the middle of the throng.

Slowness and toil are the characteristic features of the march of great masses of troops. These can be perceived when, after the music has ceased, the individuals are closely regarded, and not at the distance which Clausewitz takes. Here a poor fellow is limping along, with the exercise of all his self-control, the heavy knapsack on his back, and the rifle on shoulder, and we also involuntarily feel in our foot the pain with which a pinching boot is torturing him. There we perceive another, his face bathed in sweat, and his worn features clearly showing fatigue. Now and then an exhausted man is led to the side of the ditch and falls down. From hour to hour the column drags its way hesitatingly forwards, men, horses, and vehicles all covered with dust that hardly allows of the eyes and lips being opened. The sun shows no mercy, and sends inexorably its scorching rays against the sides of the hill along which the road winds. They send forth an unbearable heat. Only the head of the column marches on with any degree of freshness; the further back in the column we go, the more wearily do we find all dragging along; here also song has ceased. The longer the cavalcade, the more guns and heavy carriages that accompany it, the heavier is the going, and the more frequently do stoppages occur, and an involuntary halt is caused. The smaller the mass of troops, the more easily and comfortably they march, and the quicker they advance.

In no respect does the fancy of the young commander, who only knows war from books, stand in need of rectification so much as with regard to the slowness with which great columns on the march move. In his mind he wields them according to his quick resolve, sometimes hither, sometimes thither, lets them quickly reach important positions, occupy them before the enemy, deploy and attack, without allowing for any interruption. But if this ideal picture be once translated into the naked truth, we find that the act does not, by any means, follow the thought so rapidly, but always remains far behind. With a consumption of time that causes loss of patience and composure, the columns advance, and the danger that the enemy will reach the longed-for goal before them appears to increase each minute. To the enemy, whom we cannot so narrowly observe as our own troops, fancy lends her wings, and we see him in spirit hurrying up with gigantic strides.

And then it becomes patent that the orders were given too late,

and that the time allowed for the movement was under-estimated. But there are no means at hand for communicating to the great mass of men the fire that is burning in the heart of the inexperienced. The heavily-weighted musketeers cast a tolerably indifferent look at the man sitting high on horseback, who is haranguing them, and at most do they step out better so long as they are immediately under view, only soon to fall back into the old pace. They know, by experience, that if they were to respond on every occasion to such an appeal with extraordinary exertion, it would soon be all over with their energy. The whole can only with the most infinite difficulty be brought out of its snail's pace, and often the thunder of cannon hastens the step, if it be a brave-troop that hears its roar. Very remarkable are the extraordinary diversities in marching performances, which cannot always be explained by different nationalities and by the different nature of the soldiers. A march of two or three miles, which on the map appears insignificant, becomes an almost destructive fatigue; whilst, on another occasion, double the distance is covered without any apparent disadvantage. Wind, weather, roads, internal condition of the troops, as well as the after effects of past exertions,* habit, which here, more than in any other operation of war, is the master, and finally, the influence of the commander who makes this demand upon his troops—are of influence. Where three miles are considered by us as a day's work, for which the soldier under ordinary circumstances requires six, but under difficult ones eight or ten hours, and is completely exhausted with it, we see Buonaparte, crossing the St. Bernard, achieving a like performance with his army seven days running. Five, six, seven miles were nothing extraordinary for him, when moving a whole army corps in an easy country. Murat's cavalry, in pursuing the Prussians in 1806, did more than four miles a day for weeks together.† In modern campaigns equal and still greater performances on single days have often been chronicled.

On the afternoon of the 16th December 1870, the 9th German

* This was seen, for instance, in the march of the IInd Army from Metz to the Loire. Although the marches were at first not long, and were made in good weather, and upon good roads, yet considerable losses were occasioned; for all the troops had, immediately before the capitulation of Metz, undergone a very exhausting and exciting time under numerous hardships. Although the exertions of the march were subsequently increased, yet the losses diminished, because the soldiers gradually recovered, and regained the habit of marching.

† Murat marched first in pursuit of Hohenlohe from the battle-field of Jena to Prenzlau, then behind Blücher to Lübeck, and thence by Posen to Warsaw, which latter place he occupied on the 28th November 1806. He had thus, within one and a half months, covered altogether 188 German miles (840 English, about).

Army-Corps stood in readiness at La Chapelle Vendômoise, between Blois and Vendôme. Upon receipt of the news that the German positions on the Loire were threatened, Prince Frederick Charles, about nightfall, set the corps in motion to march to Orleans, distant almost nine miles (forty miles English); and this although part of the troops, before arriving at La Chapelle, had already marched two miles, and had marched them for hours over wet fields. The roads to Orleans were bad, the stones ploughed up; meeting convoys, which followed the second army, impeded the advance. And yet the army corps reached Orleans the noon of the next day, without any significant loss. Ten, ten and a half, eleven German miles have been covered by the troops in from thirty-three to thirty-six hours. But in this time the night rest, as well as the waiting at La Chapelle, is included. One battalion which made the march could boast that it had not lost a single man; of 4,000 horses, thirteen had dropped.* This performance may be compared with the best on record. Suwarow marched from the vicinity of Alexandria to the Tidone in June 1799, likewise eleven miles, in thirty-six hours. Junot, in November 1807, in his march upon Lisbon, did the thirty-five miles' distance from Salamanca by Ciudad Rodrigo to Alcantara, in only five days, and that through an inhospitable country and in a thick snowstorm. In a similar manner he continued his movement upon Lisbon; but the army, after enduring unheard-of losses, became completely disorganised. To quote instances from antiquity is always somewhat doubtful, because the accounts lack the strict historical criticism of modern times.

But these facts suffice to prove that he who only reckons upon average performances in marching may be the victim of great disappointments. The scope is a very wide one.

* A remarkable march was made by the Infantry Regiment No 14, in the period from the 4th to the 10th November 1870 from the neighbourhood of Metz to Paris. It accompanied the train columns and artillery of the 2nd Army Corps, the greater part of which was forwarded by railway, and covered forty-two miles in thirteen days. Its loss in sick, &c. amounted, during the whole period, to 136 men; out of a total strength of 2,547. It must be remarked that this regiment had, since the 18th August, lain before Metz, and had thus had no continuous practice in marching. The 10th Army Corps marched to the battle of Vionville on the 16th August, five miles; the 2nd Corps to that of Gravelotte, on the 18th August, five to six miles.

The 18th infantry division covered, on the march from Le Mans to Orleans, on the 26th January 1871, from St. Calais to Morée, five and a half miles; the corps artillery of the 2nd Army Corps, with the 3rd and 4th companies of the Infantry Regiment No. 14 in the Jura campaign, on the 29th January 1871, from Poligny, by Champagnole to Nozeroy, through deep snow and across a mountain-ridge five and a half miles, and so on.

How great is the superiority possessed by an army better in marching than its opponent follows from the conclusion that its commander is always in the position of being able to mass his troops more quickly than his enemy, and can thus attack him with superior numbers. With reference to this, the proverb "to beat the enemy with boots" is applicable. During the battle, a momentary impulse can do wonders. That is impossible during the long time a march lasts. A tired-out column on the march can, even under the application of severity, be only urged forward with difficulty. After a few hundred men are lying in the ditches, the possibility of punishment ceases; to throw themselves down and remain behind will no longer be dangerous for those who do not wish to go further. A troop is correctly estimated by the greater or lesser number of stragglers which it leaves behind it during a fatiguing march. Its internal discipline is clearly expressed in the way it performs its marches. How much the interest of the individual avails, is seen in the many instances in which armies, in other respects inefficient, after defeats suddenly develop a marvellous pertinacity and rapidity in marching. The fear of the pursuing enemy, the instinct of self-preservation impels in such moments each single soldier, and thus enhances the perseverance of the whole.

Practical preparation in peace for marching achievements is essential. It is naturally found in an army in which a lively martial life prevails; in its frequent field exercises and evolutions, its marches to the exercise-grounds and rifle-butts. But special marching exercises, in which great distances are covered merely in order to practise marching, must not be ignored. It is true that the institution of our national armies entails the fact that other soldiers are for the most part employed in the war, than those standing in the ranks in the epoch of peace immediately preceding. Yet the assertion so frequently heard, that it is, therefore, not worth while to accustom the troops to hardships, is a false one. The mechanical exercise is, it is true, very soon lost, so soon as the soldier retires into the reserve and adopts the old civilian mode of life. But the tradition of great performances is of great importance; an exertion which, according to previous experience, a soldier has learnt not to regard as anything extraordinary, he endures far more easily than that which he does not know at all. If the fatiguing exercises and the long marches, in time of peace, are discontinued, the army loses by degrees the standard for measuring what human nature can endure without disadvantage, with a little good-will. The demands are lowered from year to year. Com-

manders, as well as soldiers, gradually accustom themselves to regard a moderate performance as something great, and it will at last be so purely through the feelings of the executants.

Whenever at the height of summer at these fatiguing field-exercises an accident happens, and a young blooming life is sacrificed to sunstroke, or in consequence of over-exertion, numerous voices are generally raised, who, on that account, would entirely do away with these hard exercises. People do not reflect how necessary it is to give experience to every soldier. This experience enables him, later, to face the inevitable hardships of war with quite a different spirit than he would do if he were entirely new to them, and he will all the better overcome the inconveniences. If everything were to be discontinued in peace, by which possibly an accident could occur, the mass of soldiers would be very hardly treated; for they would be rendered helpless and weak for war, when losses would be double.

The period of the distant "assemble-marches," which in olden time afforded the best opportunity for the recovery of lost habits, is wanting in these days. The troops are often marched immediately from the railway stations against the enemy. The leisure for drilling the troops thoroughly in marching, before the operations commence, is wanting. Hence the first demands made upon them must not be excessive. Had the 9th Army Corps been required to perform its above-mentioned march in August in the Pfalz, when the war first began, it would perhaps have lost a third or even the half of its complement. Only after the war has lasted some time, and when abundant war-diet and exercise has strengthened the nerves, and the weaklings have been eradicated, then and not till then, can extraordinary performances be demanded.

Much, of course, depends upon the marches being practically arranged. To discuss them in detail would lead us too far,* and here, too, we are concerned only with the rôle of marching performances in war on a great scale.

Fatigue for the soldier on march is caused less by the fact that he has travelled a certain distance, than by the length of time he is required to be under arms and baggage. Three, four, five, or even six miles is not a great day's march for a good walker. Let us only think of the holiday tours, which one made in youthful years through a mountainous country. That even ten miles can

* The reader, who interests himself in this question, can be recommended the chapter in Mackel's *Taktik*, "Von den Märschen," pp. 148-87, as being the best comparative account of modern times. Blume's *Strategie* treats of marches with reference to their significance for a great war in the fifth chapter pp. 81-90.

be covered on foot in a single day has been proved not merely by professional walkers, Albanians and Spaniards, but also certainly by German journeying apprentices and soldiers on leave, who wanted to reach home quickly. But it is something entirely different, strolling along in light dress freely and easily, from marching in the ranks in uniform and with the full accoutrements of war. The time which a soldier is under arms must be restricted to what is absolutely necessary for covering the distance. *All unnecessary standing still and waiting must be avoided.* Accordingly orders are constantly changed. The leading vanguard must leave a great camp hours before the last battalions, and it would be wrong to put the whole of the troops under arms at the same time. If the troops have been scattered the night before among the villages, and it is required, as was formerly done, to concentrate them, before the march, in a single place, in this case those in an army corps who form the rear of the marching column would have to stand five to six hours under arms. They are, therefore, according to the position of their respective night quarters, united first of all into small groups, which then pour together from all side ways upon the main road, and attach themselves to the line, just as tributaries gradually form a big river.

Careful consideration for the arrangement of the marches is also of importance for the moral discipline of the troops. Every excess, which the simple mind of the soldier perceives to be unnecessary, annoys him. All that is necessary he readily submits to, be it ever so much. His feeling in this matter is, as a rule, a correct one, and is in no wise regulated by a fixed measure. It has been already hinted that, for instance, Blücher's well-known saying, "Night-marches are more to be dreaded than the enemy," can lay no more claim to general validity than can any other maxim of this kind. By bright moonshine, troops march upon good roads without any difficulty, almost as rapidly as by day, and, even under unfavourable circumstances, good troops have accomplished night-marches at all times without detriment. The campaigns of Frederick and Napoleon furnish many instances of this. The 9th Army Corps marched, on the 16th December, late into the night, in order to accomplish four or five miles. The instance of the troops of General v. Werder has been already quoted; and how much even a smaller body of troops can perform in night-marches has been proved by Commandant Bernard, when he, with his "Chasseurs des Vosges," marched from Lamarche to Fontenoy, close to Toul, in order to blow up the railway bridge there. He marched upon bad roads, often even across country, and through woods and over

hills in deep snow, with 1,100 men, in the night of the 19th January 1871, nearly 40 kilometres, halted the next night, was, however, alarmed, and then marched in the nights of the 20th-21st, with 300 men, 35 kilometres, and in the night of the 21st-22nd even 60. Besides this, in this last night, he drove out the small garrison, and, after several hours' work, blew up the bridge. And, moreover, under difficult circumstances, he had twice to cross the half-frozen Moselle. Only the habitual disturbance of the night's rest is to be feared worse than the enemy, especially when the ways are long and the commissariat bad, as was the case in Blücher's march in 1806. In the same campaign the troops of L'Estocq's corps marched much at night, and this, too, in the winter, and then without losing their capacity for operating. In the time from the afternoon of the 2nd February to the night of the 8th—that is, in five and a half days—they covered, mostly on by-roads, more than 20 German miles, in great part in night-marches.* In spite of this, on the 8th, the famous march was made to the battle-field of Prussian Eylau, when the small corps decided the issue of the battle. The dread that has now become conventional, and which, in these days, regards a night-march as a sort of military deadly sin, needs rectification. In the wars of the future, in which great masses will be moved within a narrow space, and several corps will use the same road, night-marches will not be able to be dispensed with.

As a general rule, care must be taken that the soldier can take his full sleep; for he needs it urgently, in the face of the great physical exertions of war. Far worse than single night-marches is the late issue of orders, by which the troops are regularly kept awake until late in the night. The same is true of a too-early start. The so-called soldier's rule, that marching from the night into the day is better than vice-versâ, is false. The first means that no one has previously enjoyed proper rest; the second that, with some exertion, the night-quarters are reached.†

Good order during a march makes it easy. But it ought not to be insisted upon as soon as disorder shows itself. But order ought only to have the object of easing the soldier; all pedantry that molests him is objectionable. *Extraordinary* alleviations, such as

* In this all the detours, as well as the marches to the quarters and rendezvous, are not computed.

† Meckel lays down the right rule, that with great bodies of troops only in special cases ought the start be made in the summer before 6 and in the winter before 8. The starting time of each single company, squadron, or battery will even then be at a quite early hour. They have, first of all, to join their regiment, and then one of the greater groups, their corps or their division.

the carriage of the baggage in the rear, &c., are justified by *extraordinary* circumstances. But, if they cannot be introduced once for all, it is certainly advisable not to accustom the troops to them at wrong times, because then they will later miss them painfully.

Much has been said in text-books about protecting the march; but a body of troops on the march needs protection but little, for it is in motion, and ready to enter into battle. Enlightenment is the proper expression. The enemy is being looked for, and intelligence of him is needed. We know that the advanced cavalry divisions provide for this. It is customary, moreover, that a separate advance guard of all three arms should precede the marching columns. Tranquillity in the body of the troops is thereby enhanced. Otherwise, if shots are fired ahead, if a halt is made, or it is reported that the enemy is close at hand, restlessness and excitement spread through the whole column. Commanders and soldiers are fully occupied, and the march is interrupted. If an advance guard precedes the troops half an hour, it is incumbent upon it to take upon itself all the consequences of *contretemps* during the march, and this produces in the mass that follows a comfortable feeling of security. All know that an impediment which the advance guard cannot overcome must arise before they themselves are engaged. But the advance guard ought only to be small. It was formerly the rule to employ a third or fourth part of all the troops in this duty. The justification of this proportion appears very doubtful. The commander-in-chief parts with a considerable fraction of his troops, and creates an independent will beside his own. Of the advance guard, the greater part always belongs to the cavalry,* even where divisions of horse are at the head of the column, for only on horseback is it possible to keep open a proper connection with these latter, and to convey intelligence rapidly to those behind them. Some artillery will always be useful. This last arm is soonest able to determine whether an obstacle which the enemy causes is seriously intended. Even dismounted horsemen, who advance with carbine in hand, are easily stopped at a barricade, the edge of a wood, or a village, by a handful of determined enemies, whilst a few well-directed shells or shrapnels from the artillery dispel the phantom. An approaching

* In high or inaccessible mountains, even in especially complicated and trackless country of another character, in passing through long and difficult narrows, in passes or upon embankments, where it is difficult to forge ahead on horseback, and large cavalry divisions cannot move, this formation will, of course, be abandoned, and infantry be taken for the extreme head of all.

N. 6
enemy, also, can soonest be brought to a halt by a battery of field-guns, and forced to develop his strength. But the advance guard requires only a very small number of infantry. Formerly it was said that it must possess sufficient to make time for the long column following the main body to deploy. But *the experience of the late wars has taught us, that the main body, as a rule, never deployed, because the urgently-needed assistance required by the advance guard when struggling with a superior enemy demanded that the troops should be led by dribblets straight into the battle.* This was quite a natural result. Whether the resistance which the advance guard meets with be weak or strong, can be but with difficulty perceived at the first moment. The commander of the advance guard who halts immediately this appears doubtful, would continually impede the march, and, should it then appear that but little was before him, he would be bitterly reproached. Every good soldier prefers to be blamed for too great audacity than for too great caution. If the undertaking turns out badly in the first case, he can, at all events, comfort himself, with King Francis, "Tout est perdu, fors l'honneur." That is impossible in the second case. Moreover, in an army which ever inclines to fresh energy, no leader will, after the war is over, be dismissed, whose character is that he was indeed bold and enterprising, but on one occasion showed himself rash. Far more chance of being shelved has that man who is called well-informed and deliberate, but too cautious. We may be certain of this, that every courageous commander will, in doubtful cases, decide for the attack. And if he has, besides his cavalry and artillery, a whole regiment, or even a whole brigade, with him, there lies therein an imperative demand to try conclusions in battle. Who would like to have it said of him that, whilst at the head of such a force, he had allowed himself to be deceived or stopped by a handful of daring shots of the enemy, or that he had allowed a brilliant opportunity for dealing a successful blow to escape him? Rather dare!

An engagement can be easily checked, as long as only cavalry and artillery have had a brush with the enemy. The distance of the batteries is great, and the cavalry finds in its celerity the means of withdrawing from contact with the enemy. But if the infantry has once come into fire, it is very difficult to stop. It is impossible to recall simultaneously all the many men. If the firing is stopped at one point, it begins again afresh at another. Signals can seldom be employed out of regard for the troops in the proximity. In the place where one's own musketeers cease firing, the enemy, no longer held in respect, makes use of

the opportunity to advance, and forces them to re-assume their resistance. Thus, as a rule, the conflict surges to and fro, until the commanders perceive that things must be allowed to take their course. The greater the force of infantry engaged, the more does the possibility of breaking off the action fail.

For example, if the commander of the advance guard has only a single battalion at his disposal, he will with all the more readiness come to the determination to halt wherever he meets with opposition, in order first to allow free scope to the decision of the commander of the division or corps. No one demands of him to really engage the enemy with such an insignificant force of infantry, though his force is still sufficient to suppress mock-fighting. Where in an advance the pioneering cavalry division, with two or three batteries and some advance guard of infantry, does not suffice to break through, there will, in most cases, be need of a serious engagement, in order to crush resistance, but of this the commander of the whole advancing mass of troops is the best judge. And thus we arrive at the conclusion that even in the case of a division and an army corps it is very often sufficient if the pioneering cavalry is followed by a battalion as vanguard. It affords at once the proper protection for the artillery of the advance guard, where this does not consist merely of horse-artillery, which always march with the cavalry.

If it be seen beforehand that the advance guard will have a special mission to perform, if it be determined to secure a position by it, it must, of course, be made stronger, and, by its constitution, be rendered capable of successfully engaging in serious action.

Usage in the German army has naturalised an advance guard consisting, in the case of a division, of one infantry regiment of three battalions, three squadrons, a battery, pioneers, with sappers and miners, and an army hospital corps. In the case of an army corps, it is an infantry brigade of six battalions, to which is added one or both cavalry regiments belonging to the division,* two batteries, and the necessary supplement. Text-books describe these advance guards as models. They find intelligence, as well as undertake special commissions, and engage the enemy independently. At the same time, owing to their separation, an acceptable distribution of the whole marching mass is effected. They can, therefore, be described as being "advance guards for all eventualities," and, in so far, be described as models. But in war, only

* With the exception of certain squadrons left behind with the main body and formed into a brigade.

seldom will the situation be so little critical that some special reason will not determine what the constitution of the advance guard shall be, and it will not be wise to deviate from this instance. These normal advance guards have, at the same time, the apparent disadvantage that in the case of a division, a brigade, and in that of an army corps, a division is split up. It is these advance guards, further, that take the decision as to whether battle shall be given or not, right out of the hand of the generals in command.

The time for advancing is best gained by pushing the cavalry further ahead, so that the news of the approach of the enemy is obtained sufficiently early, and the decision as to when and where the advance shall take place can be made in time. In case of need, the planting of a few batteries which, with a lively cannonade, compel the enemy to develop his strength, are a better means of making the requisite time than an engagement by a strong advance guard of infantry. The former does not oblige to anything; but the latter forces us, as a rule, to accept a decisive battle.

The case is different in marches on the retreat, when it is desired to avoid battle. Here strong rear-guards are necessary, in order, in suitable places, to make the pursuit uncomfortable for the enemy; whilst the main body remains the while in motion, and does not interrupt its march. But, in the case of the rear-guard also, an obstinate engagement is an evil, because it renders its retreat difficult, easily entails losses, and the main body may even be compelled to front round and do the opposite of that which it is its purpose to do.* In the case of the rear-guard too, the artillery plays an important part, is, in fact, almost the chief arm. The tremendous effect of its far-reaching fire is the best means of keeping the enemy at a distance,† and that is the task of every rear-guard. It will be well to aggregate to it, for the time being, a larger number of batteries from the artillery of the main body.‡

The points of view from which the advance and rear guards are looked at determine the sequence of the troops within each indi-

* Only towards nightfall can the rear-guard, as a rule, without danger, form for a serious battle, because here the enemy lacks the time to make his superiority felt. Yet it is worthy of remark that the darkness in our latitude does not suddenly set in, and an active enemy can, even in the dusk, undertake much.

† The longer it holds out, the more does it, on this occasion, fulfil its destiny. The danger of losing a few guns must not be regarded, and never be a reason for prematurely withdrawing.

‡ If these are no longer required by the rear-guard, they can soon, on good roads and in quicker tempo, catch up again the main body that has, in the meantime, marched away, and thus do not even lose anything of the results of the march.

vidual column. Behind the cavalry ought properly to come a division of artillery; that is, follow the arm that is always required for commencing the battle. But the fear that the cavalry might be thrown back and an enemy in pursuit enabled to throw itself upon the defenceless batteries, leads to the usage of allowing at least some infantry to march, at all events, in front of the artillery. Of course all artillery is not placed so far forward, because otherwise the infantry behind it would arrive too late upon the scene of action. The corps artillery of an army corps, which in the marching column alone takes up about seven kilometres, cannot, on that very account, be well enclosed in a division, because the infantry marching behind it would then arrive full one hour and a half later upon the battle-field, where the commander of the division would all the time have been holding out with only one half of his troops. It is, accordingly, taken between the two divisions of the army corps, if the whole corps has only a single road upon which to march.*

Hitherto we have contemplated marches which are directed straight against the enemy. Now something must be said about such as pass by his positions or by the heads of his columns. We call them *flank marches*. They have the reputation of being difficult and dangerous undertakings. Military history, however, teaches us that, in flank marches, no more should be undertaken than is allowed in theory. Frederick the Great marched, at Prague, round the right wing of the Austrians, and at Kolin even right along their whole front. In those times the armies, when they had once taken up their position for the battle, were hard to move; for the order of battle must not be disturbed. There was, accordingly, no great reason for apprehension that the enemy, on observing the flank march, would make a counter move; and the King, as a matter of fact, never feared it. All that has to-day been altered. The separate parts of each army are independent. They are thus enabled to make a counter-move against the passing columns. But even in these modern times it is difficult to put into motion, into a direction not previously projected, a large body of troops that have only just been developed. Very frequently the right moment for acting passes by, or the general is, at all events, doubtful whether it will not pass by, and so omits the attempt. If the whole force of the opponent does not make the flank march, but a part has been left behind,† there will be danger, in pushing forward, of coming between both

* Compare, moreover, the plan.

† For instance, in beginning a general attack.

groups—the marching and the stationary—and thus being placed in a dangerous predicament. And therefore it is that, even in manœuvres, flank-marches are successfully executed even within sight of the enemy.

Greater still, of course, is the danger when the enemy, whilst a flank movement is being effected, is already in motion. Then we shall do well to choose a greater distance from the heads of his columns, or to implicate him simultaneously in an action by divisions other than those that are executing the flank march, and thus attract his attention.

On a simple march forward it is, as a rule, of no importance whether the army be met with a quarter of a mile nearer or farther away, or must advance to battle in this place or that. In a flank march, on the other hand, a definite object is in view, which it is desired to attain without battle and delay. In so far, every interference by the enemy is unpleasant. He is waited for with a certain suspense, and thus gains the impression of executing something difficult. Besides, it is inherent in human nature to take a higher estimate of a danger which threatens either in the rear or on the flank, than of that towards which one is marching. The soldier in the marching column assumes that his commanders suppose that they have the enemy straight before them. If, then, he appears on the flank, the soldiery rapidly get the impression that they are surprised, and this destroys confidence. Flank marches, which are known, even by the private soldier, to be such, are easy to effect. That this is so is proved by the numerous marches within the investing lines of Metz and Paris in 1870, for the purpose of concentrating the forces. They were all by nature flank marches, as against the enemy stationed between and behind the forts of the fortress. But here the whole situation was clear to view, for everyone knew that during the march they could only be attacked from the side where the fortress lay, and the feeling disappeared of their being placed in an extraordinary position. Quite unconcernedly the troops marched along or behind the investing line right to the point threatened, because this appeared quite natural. Not even were special precautions, on a single occasion, taken.*

An army corps on the march, unexpectedly attacked on the flank, must needs wheel round to that side, and forms a line of

* The protection afforded by the fortress-works in that line was, for instance, at the time of the battle of Noisseville in many places very unimportant, and the lines also, in order to bring troops enough upon the field of battle, were, as a rule, only led by the vedettes.

battle three miles in extent, in which there are various larger and smaller openings. But the surprise will never be of such a nature that the front must be changed on the road itself. There will be ample time to take up a position on the side of the marching column. In this the corps can be more rapidly assembled than towards the apex, because the distances are shorter. The rear of the marching column has, as is well known, to cover* twenty-four kilometres before arriving at the apex, but in order to reach a position three kilometres to the side, only eleven kilometres are required.†

Only where a development of the marching column upon the flank is impossible, owing to the terrain, as for instance in a narrow defile, is the situation worse. But the same terrain is here, as a rule, a protection against interruptions of the flank march, for the enemy would lack the roads for coming up.

The rules of the art of war advise the flank march being covered by a special corps opposed to the enemy, behind which the forward march is to be executed. But the presence of this corps will very frequently first draw the attention of the enemy to the movement. It can, at best, only be weak, and invites directly to the attack the enemy, whilst it should keep him off. Where, accordingly, the distance on the terrain affords some protection, such a measure must not be adopted, and action be restricted to a careful watch kept over the enemy by cavalry. The later employment of the troops sent as cover will be difficult. The movement thus as a whole becomes delayed. When in 1866 Benedek executed his "well-ordered flank march" from Mähren to the Upper Elbe, he placed the 2nd Army Corps and the 2nd Cavalry Division against the province of Glatz. This contributed to delay the execution of the whole movement.

In the Napoleonic period it was claimed that a line of battle must under all circumstances have a great depth. This will, however, seldom be the case, if, when surprised by the enemy on flank-march, it is required to change front. But in these days we can afford to abandon this formation, for our weapons of precision give a thin line great powers of resistance.

The dread of flank marches must accordingly be treated in the same manner as the dread of night marches. It will be good to

* Here I have taken the breadth of the position at four kilometres, and calculated that the troops at the rear of the column only need reach the wing.

† Only when the position should be taken up close to the van or the rear of the column would, of course, the march be of greater length than by *unfolding* towards the head. But such a case will scarcely ever occur.

overcome it. When in the future armies advance up and confront each other on a frontier, the possibility of a first success will lie in a rapid concentration of troops towards one point. This can only be effected by employing bold and rapid flank marches. It will especially be the case, so soon as one is confronted by a chain of forts (Sperr-forts) behind which the enemy has extended himself.

Certain precaution is certainly imperative on flank marches. It will be well, by restricting the spaces between the single parts and by broader marching to shorten the extent of the whole column. And, of course, the baggage and train must not defile behind the troops that are passing the enemy, if he be very close. They must proceed on the other side of the marching column, and parallel with it. In the case of flank marches, which must take place under the eyes of the enemy, the night may very well be utilised for the purpose. In case the flank march is executed by a whole army, it must be provided that, in case of necessity, we are able to develop in strength towards the side. This is accordingly a case in which, upon the road lying nearest to the enemy, two corps may be allowed quite rightly to follow each other, as closely as possible.* But with such precautions sufficient has been done.

Clausewitz says "the destructive influence of marches is so great, that it may, side by side with the action itself, be laid down as being an established principle." This is beyond doubt correct. Thousands are always marched to death, even when all circumspection be used. Napoleon in 1812 lost on his march into Russia in fifty-two days, during which only seventy miles were covered†, by disease and stragglers, nearly 100,000 men. Here bad discipline was partly at fault. But, apart from this, the losses on the march would have been very great. Even if those who are lost from a column are not dead, yet they are, as a rule, lost for purposes of the campaign, overfill the hospitals and train behind the army, and are a great burden.‡

* When towards the end of June, 1866, the IInd Prussian Army entered Bohemia, the 6th Army Corps followed the 5th upon the threatened left wing, which in a certain sense executed a flank march before the approaching vans of the enemy's columns. Both were, as is known, for a time placed under the sole command of the General von Steinmetz.

† Calculated in a straight line.

‡ The formation of companies from the fatigued soldiers for the purpose of garrisoning places in the rear of the army, which was ordered by Prince Frederic Charles in 1870 in the IInd Army, turned out well. By this means troops were saved which

If the ordinary measure, according to which an army corps in a single day only advances about the length of its own marching column, can, in special cases, be much exceeded, the General will, on each occasion, have to calculate whether the loss probably caused thereby will be outweighed by the successes. Forced marches, when the enemy keeps out of the way, such as, for instance, might take place in Eastern battle-fields, must, in a material respect, be considered equivalent to a defeat. Even bad moral after-effects are not entirely excluded. They awake us to the consciousness of having wasted life and energy.

Besides the marches, the transport of the troops plays a considerable rôle in these days. It was formerly only known on the sea. Napoleon, who knew how to make everything possible, transported, in 1805 and 1806, his Guards, and, in 1814, the troops returning from Spain, in waggons. They covered each day about ten German miles. In these days, as we have seen, millions are conveyed by railway to the frontier, on the advance.

If the war has already begun, the transport of troops upon the railway, if undertaken on a great scale, will meet with many difficulties. The lines are fully engaged with transports of all kinds, the staff of officials has been weakened by being employed for war purposes. After the exertions during the period of the advance to the front, there comes naturally a certain relaxation. The rolling stock has been scattered. The proximity of the enemy is productive of disquietude, and the performances will easily not equal the expectations. To bring up reinforcements from provinces not threatened, is easier than to transport behind or upon the lines in which the armies stand. But, seeing that, considering the speed of railway journeys, circuitous routes are matters of no importance, we shall always have to reckon upon the sudden transplantation of large bodies of troops. The advantage of this is reaped by the defender upon his own territory.

During the campaign on the Loire, during the period from 7 o'clock in the morning of the 27th October 1870 to the 28th October 9.20 P.M., 28,000 infantry of the French 15th Army Corps were transported from Talbris, in the Tologne, *viâ* Vierzon and Tours, to Mer, near Blois and Vendôme—that is, from the left to the right bank of the Loire—without this movement having been perceived by the German troops. Until 8 o'clock A.M. of the 29th October there followed also sixteen batteries, two regiments of cavalry,

otherwise would have to have been taken from the army, and the vigorous watch duty which they had to undergo aroused in those left behind the desire to join soon the army again.

munition columns, &c. In November of the same year, 40,000 men of all arms, under the General Crouzat, travelled in eighty-eight railway trains from Besançon, on the Doubs, to Gien, on the Loire, and took three days. Of this movement, likewise, the news only reached the German head-quarters after the corps had reached its destination. Sometimes French military trains were, during the Loire campaign, despatched at intervals of ten minutes, or even followed one another quicker than this. On the other hand, the attempt made to convey the army of General Bourbaki, at the end of December 1870, quickly from the Upper Loire to the valley of the Doubs came to nought, owing to the want of the necessary preparations and of unity in the command. Two corps and the army reserve, consisting of a division, required seven days to be entrained, and, altogether, ten days were occupied for the whole journey, which it was hoped to perform in half the time. A corps that subsequently followed the army required the period from the 4th to the 16th January to arrive at the Upper Doubs, near Belfort, from Nevers, because in the interim an unusual blocking of the traffic had been caused by the meeting of transports of troops, war *matériel*, and supplies. It would have been wiser to have relied upon foot marches than to have insisted upon utilising the railway, particularly the single line along the Upper Doubs. Small railway-stations there rendered unloading difficult; the laying of temporary lines and sidings was impossible in the narrow valley between the river and the walls of rock in the hurry. Still less will, during the operations, the attacker in the enemy's country be able to think of transporting troops on a great scale, even though he take pains to repair the railroads occupied by him, and to utilise them.* As a rule, they only suffice to convey to the army its necessary supplies of provisions, ammunition, and reserves, &c.

* The following instances of the utilisation of railways in the enemy's country during the French war on the German side may be given. The 14th Infantry Division, which, towards the end of the year 1870, besieged the fortresses on the northern frontier of France, was transported thence by railway to Châtillon sur Seine in the period from 7th to 14th January. On the 14th January the combatant part of the division was concentrated at Châtillon. Then followed the train and the columns.

After the fall of Strassburg the Landwehr division of the Guards was conveyed to the army before Paris. The shipment was begun on the 7th October, was obliged to take the very busy line *vid Frouard*, and did not arrive in Nanteuil until between the 10th and 19th October.

Similarly was the 2nd Army Corps conveyed from Metz to Paris. The 3rd Infantry Division, ten battalions, a squadron of cavalry, four batteries, a company of Engineers, a detachment of the Hospital Corps, a field-bakery column, a field hospital, a provision column, and 120 waggons strong, covered the distance altogether in twenty-four railway trains in the period from the 3rd to the 8th November. The 4th Infantry Division began to load in Pont-à-Mousson at noon of the 26th October.

The advantage which railway journeys possess over foot marches is clear from the fact that, whilst for the latter eight miles is regarded as the ordinary performance for twenty-four hours, a train of moderate speed covers ninety miles in the same time. The exertion will, in a certain way, be somewhat greater in the case of the railway journey than in the case of the march, on account of the want of a night's rest. But it must be considered that troops, after leaving the railway train, can at once do a moderate march, and as a rule, after the long sitting in the waggons, hail it with pleasure. The difficulty in transporting large masses of troops by rail consists more in the loading and unloading than in being conveyed from one point to another. In the case of single lines of rail, which have no separate metals for the returning trains, block in the traffic very often arises, and thus their capabilities must be much less trusted, and can with much less certainty be depended upon than double lines. As a rule, twelve trains a day is regarded as the greatest performance of a single line; eighteen a day, that of a double. Colonel Blume, after the experience of 1870-71, considers it advisable to assume only eight and twelve instead of those figures. By so doing, one would certainly be on the safe side. It is as much as—on the French side in 1870—was achieved in those transports, of the slowness of which there were so many complaints.

Where circumstances would make it appear feasible, the railway-transport will be preferred to the foot march; for the losses of the march will be spared by the railway journey. In every case it requires a special calculation as to whether the goal will be soonest reached in the one or in the other manner. An army corps requires as an ordinary achievement on a single line eleven, and on a double seven days in order to get under weigh with all its *matériel*. On foot in eleven days it can cover nearly thirty, and in seven days twenty miles. Only when the railway tracks that are practicable are longer than these distances, does a gain in time result for the whole army corps. But very often it is only necessary to have a part of the forces quickly on the spot, and it is then sent ahead by rail, whilst the rest follows on foot.* Both means of transport can often be thus combined; that the infantry is conveyed by rail, whilst the artillery, cavalry, train, and columns, march, and cover greater daily marches than ordinary. If it be required by the nature of

On the 6th November the combatant part of this division had, with a detachment of a hospital corps, a field hospital, and the necessary columns assembled at Lonjumeau. A part of this corps marched to Paris on foot.

* *Meckel Taktik* (p. 23) gives a number of interesting instances of this kind.

their employment at their destination, the infantry is given some artillery and cavalry. For greater safety, on the other hand, the marching part of the corps is accompanied by some infantry. The extraordinary importance of railways for supplying and keeping the armies, as well for the conveyance of combatants, will always cause the intruder into the country of the other to turn their services to account as quickly as possible. The reparation of destroyed railways progresses with the advance of the army. Temporary lines of connection, like the one laid in 1870 between Remilly and Pont-à-Mousson, for the purpose of avoiding Metz, will in future be built to a greater extent than hitherto. Railways are in these days indispensable for the fortress-war, as modern siege-engines cannot, where the distances are long, be brought up on country roads. Apart from the heaviness of the guns, the amount of matériel is so great that, for instance, for organising the unbroken transport over about twenty German miles, 20,000 horses and 20,000 men would be required. In these days, in besieging a great fortress about 7,000 to 8,000 cwt. of ammunition is fired away. The utilisation of railroads is accordingly here a *conditio sine quâ non*, for such a weight of metal no one would wish to bring up continuously on waggons upon country roads.*

Sea voyages of troops have, in contrast to the railway journeys, in spite of the rapid development of the maritime traffic, made no important progress.† It is true the speed approaches that of

* For the utilisation of railways in war, the following figures are conclusive. A railway train can take a battalion, something more than a squadron; so that three trains may be calculated for a cavalry regiment of four squadrons, or a battery, or a column, and so on. An army corps, with all its matériel, needs, accordingly, ninety railway trains. An infantry division (without train) twenty. A cavalry division (with no train) also twenty. By this can be computed how many days such a mass of troops requires for its conveyance. If, as above, for instance, eight trains be assumed for a single line, and twelve for a double, per diem, the whole army corps will, on the first-named, be got under weigh in eleven, and on the second in seven and a half days; the infantry or cavalry division in two and a half and one and two-third days respectively. If the time occupied by the journey in one case be added, we obtain the time which is required to convey the troops in question from one place to another. As a military train makes at most four German miles in the hour, for example, for being transported 100 miles (German):—

An army corps upon a *single line* would require 12 days; a double, 8½.

The advance-guard of an army corps (*vide* Supplement) would require 2½ days; a double, 2.

The infantry or cavalry division would require 3½ days; a double, 2½ days.

As the instances given from the French War prove, these performances can be on occasions increased to an extraordinary extent. Cf. *Über die Eisenbahnen im Kriege*; Blume, *Strategie*, pp. 91-95; Meckel, *Taktik*, pp. 21-25.

† We must remember that only Europe is here considered. During the Civil War in America the sea transport of troops played a great rôle. The army of the

a moderately fast railway journey. But no State can keep on foot fleets of transports sufficient to convey whole armies. Even for a single army corps only France possesses, in time of peace, the sufficient State-transport squadron. All powers are obliged, accordingly, to press into their service merchant-ships, mail-boats, and other steamers belonging to private enterprise. But the great inconvenience results that these ships all require a lengthy re-fitting of their internal arrangements in order to make them capable of receiving troops. Tables, benches, and clothes-pegs must be fitted, hospital requirements and kitchens, &c., arranged.

The loading and unloading is difficult. The great steamers of which each, for instance, is capable of containing a battalion, have a deck so high that horses and boats can only be got on board by means of cranes. The smaller steamers, such as ply in the Baltic, have, on the other hand, not sufficient room. A single infantry division, with the necessary complement of columns and train, which are indispensable owing to their independent employment, would need nearly fifty of such vessels, whilst a like number of great transatlantic vessels suffices for an army corps.

For landing each ship, when harbours are not available, 300 metres of coast is required, a fleet of transports with an army corps, about three miles (German). As such extensive landing-places can rarely or never be found, landing must take place gradually by degrees. To effect this, of course, it is requisite to disembark into small vessels, boats and luggers, in order to pass through the shallow water that is too deep for wading. The caprice of the weather makes here all calculation as to time impossible; it may entirely prevent the landing being effected, and a storm may cause a catastrophe. How much great squadrons of transports are exposed to attacks on the part of the enemy is self-evident. The uncomfortable torpedoes increase the danger. It is necessary to be perfect mistress of the sea in order to be able, with any degree of tranquillity, to undertake the transport of troops on the sea. Finally the troops, which can in this manner be conveyed, play in war, on the great scale on which it is conducted in these modern

Potomac, under MacClellan, 80,000 men strong, was conveyed between 17th March and the 4th April 1862 on shipboard from Alexandria on the Potomac to Port Munroe on the James River. The resources of the Americans in means of transport, and their energy in overcoming technical difficulties, rendered this result possible. In Europe the most remarkable sea-transport of troops of modern times was that of the allied army at the beginning of September 1854, from Varna and Baltschick to the Crimea; 63,000 men, with 207 guns, were conveyed on 330 ships. But all preparations for this magnificent performance were able to be made at leisure, and the voyage performed without any interruption.

days, only an insignificant part. The expenses attendant upon sea-voyages are, besides, disproportionately great. Only England, by reason of its situation, its wealth, and the number of its State and private ships of the greatest size, is in a position to perform anything great in the way of transporting troops and employing them across the seas. The other Powers must confine themselves to exceptional cases, when there is no other remedy at hand. Among them France has a considerable start in such superiority.*

River navigation can be very serviceable in conveying infantry. Before all else it will be utilised to provision the armies. Frederic the Great, on his various campaigns in Bohemia, regarded the Elbe as a main line of communication. The Ober-Kommando of the Second German army organised in July 1870, during the advance to the front, a flotilla of six steamers and numerous tugs, to serve on the Rhine between Worms, Mayence, and Bingen as a movable magazine. The vessels were filled by purchases made in Holland, which, however, soon closed its frontier, the Lower Rhine, and even in the place of rendezvous, as well as from the available stores in the fortresses of Coblenz, Cologne, and Wesel. When the rapid advance of the armies into France took place, the ships' stores were delivered to the great magazines in Bingen and Worms.

* In February 1871 the 22nd French Corps, 18,000 men and 10 batteries strong, was in a short time conveyed from the Northern theatre of war to Cherbourg by ship. On the 16th July 1877, forty-nine Turkish batteries, under Suleiman Pasha, were embarked in Antivari and landed from the 19th on in the mouth of the Marica.

(To be continued.)

Naval Reform.

TRANSLATED FROM THE LATE MONS. GABRIEL CHARMES' "LA RÉFORME
DE LA MARINE."

By J. E. GORDON-CUMMING.

CHAPTER II.—*cont.*

NAVAL WARFARE AND THE ORGANISATION OF NAVAL FORCES—*cont.*

"THE growing idea of constructing a vessel suitable for every purpose," says Mr. Gougeard, "shows itself in many ways. The constructors have further aimed at enabling it to attack fortifications. The turret guns have an elevation allowing them to engage forts situated at an altitude of 400 *mètres*. Is it not madness to employ a vessel that cost twenty millions (*francs*) to bombard a fort? Its principal merit, that of speed, would find no scope; and the fire of some big gun cleverly placed might do it incalculable mischief."*

This is sufficient testimony. We have only to recall the mischief done to the English vessels by those poor Egyptian gunners, or to the *Galissonnière* by the Chinese fire, and we shall have no difficulty in realising the certain disaster that would befall a squadron of ironclads lightly measuring its strength against the great English or German naval strongholds. The armour-plated coast-guard ships, a kind of floating siege-train, such as the *Vengeur* and the *Tonnerre*, would not fare any better. Armour-plated coast-guardships, and ironclads, would both have to reckon with the torpedo, and would have to run far greater danger by its means than by any firing from forts.

They could not approach the shore without coming against a mine-torpedo; just as this year (1885) the Russian vessels in the great manœuvres frustrated the siege of Cronstadt. But even at a distance they would not be safe. We have explained, at some length, how, from the very first, both parties would be enveloped in smoke. The torpedo-boats would then advance against the ironclads, hidden, like the ancient gods, in a cloud, invisible, as they were, until they suddenly descended amidst thunder and lightning.

The English understood this perfectly; all their newspapers

* M. Gougeard, *La Marine de Guerre, son Passé et son Avenir*.

agreed, after the siege of Alexandria, that the blinding smoke made it very difficult for the ironclads to continue firing, and that if the Egyptians had possessed torpedo-boats the peril would have been very great. In future it will be so great that we can only wonder what admiral will be endowed with sufficient audacity, or rather temerity, to venture on bombarding a well-fortified port with these monster vessels.

Obliged to keep at a certain distance to give his defensive torpedo-boats and his look-out ships space to extend their protecting lines, the firing from his ironclads would be greatly weakened. Each of these ironclads would be in dread of an explosion, which might reach them at any moment by the sudden advent of a torpedo. The gunners would think a great deal more about defending themselves from this minute enemy, which they would incessantly image to be close upon them, than about the distant forts now enveloped in smoke; and their firing would consequently be very unsteady.

The attacking squadron, being itself attacked, and having to conduct two such dissimilar operations, would probably fail in both. Even if this were not so, and it succeeded in effectually bombarding the fortified place, nothing could protect it, at night-fall, from the assaults of its enemies. It would be forced to seek the open sea for safety, and it would reach it exhausted by a day spent in superhuman efforts, and would no sooner get there than torpedo-boats and gun-boats, turning up from every point of the compass, would oblige it to begin all over again, and to defend itself after it had attempted an attack—and what advantage would be gained by all this? Once again, what advantage is to be derived from bombarding, or even burning Malta, Gibraltar, or any other of those old and once formidable fortresses to the ground? Would the place submit any the more? Did Belfast capitulate after trials of this sort? In order to obtain possession of fortified places they must be invested for a long time, and this is impossible at sea. It is barely worth while to set an arsenal on fire. What did we gain by the destruction of that of Foo-Chow? To attack Toulon, when Nice, Marseilles, Cette, for instance, could be laid in ruins without incurring the slightest danger, would be one of those martial follies, one of those military absurdities against which M. von der Goltz has protested so strongly in his book *The Nation in Arms*. Attacking or defending the fortified places on the seaboard is no longer, and never will be, anything but a reminiscence of the past. Every nation will in future protect its shores by means of torpedo-boats; and it is with this intention that

Germany is, at the present moment, constructing a hundred and fifty for her own use, and Austria seventy-five. We ourselves possess a certain number of 27-mètres torpedo-boats, which would be very suitable for the purpose if they were armed and commanded by good officers. But we ought to have ten times more, twenty times more, when we consider the extent of our seaboard.

Whatever happens, this new danger is what we shall have to contend against, when we attempt to land on hostile shores in any future war. Now to avoid, just as to fight, these indefatigable rovers, encountering and sinking our ironclads, do we not still require small vessels of great speed and of light draught? Our 14-cms. gun-boats possess these two qualities. We should only require them to bombard open towns, commercial cities, and unfortified places, where they would appear suddenly and accomplish their work of destruction, although ready to fly if the defence were too well organized. It may, however, be necessary provisionally to blockade the fortified ports, and to force their channels, so as to cripple or destroy a fleet of hostile ironclads. This might be accomplished by audacity and determination.

We have shown that it was impracticable to blockade cruisers and fast gun-boats; it is a much easier matter to shut slow-going ironclads into a port by cruising round that port. A few shots might reach the torpedo-boats and gun-boats, but, considering their dimensions, there would be every chance of the projectiles missing the mark. If a fairly open channel had to be forced, which ironclads could never do, torpedo-boats of the necessary speed and size should be sent out, and would glide unharmed beneath the fire of the forts, whilst the gun-boats endeavoured to reduce these forts to silence by lucky shots into their embrasures. They would throw the town into dismay and terror, by bombarding the arsenal, the shops, and private houses from afar, as the Prussians, convinced that the weak point should always be attacked, sent their shells over the fortifications of Paris and Strasburg.

The objection will, perhaps, be raised, that these fleets and this system of war will be unsuitable for Colonial enterprise. Nothing is less true.

Either from insufficient *matériel*, or, more likely, owing to the absolute inexperience of the sailors and soldiers, the armament of the coasts is still in its infancy in the countries which are the centres of these enterprises. Take Tunis, Tonquin, China, for instance. We have already explained why small gun-boats would have been greatly preferable at Sfax for approaching the land. The large ironclads, thanks to their heavy draught, were unable to

use most of their guns. We may ask of what good our ironclads were to us at Tonquin? They certainly bombarded the forts on the river at Hué; but two gun-boats managed the greater part of the affair, as their light draught enabled them to cross the bar. After this exploit, the ironclads remained stationary in the bay at Along, and their men were only employed in landing-expeditions.

Gun-boats and defensive torpedo-boats would have been far more useful. They could have reduced the forts, as well as the ironclads; the transports would have landed as many men; and, finally, with their rapid mobilisation, they would long ago have cleared the Gulf of Tonquin of those pirates that infest it, to the discredit of civilisation and our domination.

We think the fact is indisputable that, after the exploits of the 45 and 46 torpedo-boats at Foo-Chow, and those of the *Bayard* at Shei-Poo, a fleet of torpedo-boats could easily have vanquished the Chinese fleet.

A flotilla of gun-boats could have equally silenced the forts on the river Min. It might not have been able to destroy the works at Foo-Chow, for they were raised by a Frenchman on the principles of modern fortification. This destruction of the Foo-Chow works was not, and could not, be completed with the means at the disposal of our gallant Admiral Courbet, and we again ask what weight it had in the Chinese deliberations?

Foo-Chow is one of the most glorious names in our annals of war; its destruction is one of the most splendid feats our navy can boast of. This is a great deal; it is everything; but the results would have been far greater if obeying the necessities, and, therefore, the principles of modern warfare, our squadron had left Foo-Chow and its arsenal on one side, and then thrown itself into the Yangtse-Kiang to bombard its undefended towns, sink its junks, obstruct its canals, stop trade, and incite revolution in the districts still disaffected from the Tai-ping insurrection, and still smarting from the cruelties perpetrated during its repression. We condemned our troops to sufferings and sacrifices that seemed endless that we might fight China according to the ancient system, as if it were a European nation, to whom the loss of a fort would be a disaster, because a humiliation.

On leaving the river Min, our squadron tried to take Kelung and Tamsui. At the former place it was successful. It failed at Tamsui, and had to rest satisfied with blockading the coasts of Formosa.

This blockade was exceedingly difficult at that particular season,

and would have been more effectually accomplished by small gun-boats cruising rapidly in the open, and able, in the event of bad weather, to take refuge in the nearest bay, an impossibility for ironclads. But who knows whether Tamsui would not have been taken at once, if our naval forces had been organised in the way we have pointed out.

May we not believe that, from the very first, gun-boats endowed with the valuable qualities we have pointed out, and, in any case, defensive torpedo-boats, would have crossed the bar which stopped the ironclads and cruisers? Steaming up the river again without striking a single blow, they would have occupied a town the name of which now merely recalls a reverse to our sailors, who, nevertheless, showed the same bravery as at Son-Tay and at Foo-Chow.

We think we have now answered all the objections that have been made, or can be made, to the new engines of war which we suggest for naval use. It still remains for us to demonstrate how much cheaper and less costly they are than our present fleet.

This, however, would take us too far. We will only cite one instance. Our evolutionary squadron, prepared for great battles at sea, the centre and essential component of our naval force, is generally composed of six ironclads. Take an average of 15 millions (*francs*) for each; this gives a total of 90 millions (*francs*). Put their crews at 650 men, and we have a total of 9,800 men.

Thus, according to our previous calculations, one of our fighting groups in a naval action would have greater offensive properties than one of the ironclads, and, in other situations in maritime warfare, these united groups would furnish much more useful and much more rapidly-obtained results than these same ironclads. Now, six fighting groups, which we shall take as the equivalent of an evolutionary squadron, represent twelve gun-boats, at 8 millions (*francs*), and carrying 600 men; twenty-four attacking torpedo-boats, at 6 millions (*francs*), and carrying 836 men; twenty-four defensive torpedo-boats, at 6 millions (*francs*), and carrying 432 men. Finally, three transports, meaning one transport for two groups, at 12 millions (*francs*), and carrying 1,380 men. We thus reach a general total of 42 millions (*francs*) and 2,748 men.

We have only to compare the two and draw our own conclusions. We restrict ourselves to speaking of the squadron. We set aside the ironclads in dock or in harbour, our armour-plated cruisers, &c. We do not take into account the enormous accessory expenses necessary to the construction of large vessels, ruinous workshops, enormous cranes, vast docks, the immense *personnel*, &c.

On the squadron alone we save 48 millions and 1,152 men. We

shall, as a matter of fact, have more officers in our fighting groups than in this squadron.

This is by no means a cause of regret, for our officers of the present day do not have enough opportunities of handling a ship; they hardly ever have a command, and lose all their qualities of energy and decision, either on land or on board the ironclads; the captain, who has all the responsibility, leaves the initiative to no one. Our superior officers, weakened by this debilitating system, will find a sort of regeneration, we might even say a resurrection, in the new régime.

But this navy does not, as yet, exist, and, although our light fleet may easily be organised in a few years, it cannot be got ready all at once. There is a period of transition to be thought of. What would happen if—as Heaven forefend—we had to undertake a naval war within a few months?

Let us glance at our fleet and see what meets our gaze. Does it possess the elements necessary to that War of the Future we have endeavoured to portray? Could it face this war without exposing itself to disaster?

We have said that the war of the future will be a war of chase; an offensive and defensive war on our coasts and on the enemy's coasts, on those of our colonies and the colonies belonging to the enemy. For this, swift cruisers are necessary, and we have none! The last constructed by our engineers are less swift than those that preceded them; progress with us has been inverted; we have walked backwards. We further require gun-boats, linked torpedo-boats, and transports: we have absolutely none! To second the cruisers and organise the offensive and defensive system on the three seas bordering our land, in the western basin of the Mediterranean, in the radius of our colonies and those of our opponents, we require small squadrons of torpedo-boats, besides fully-rigged cruisers for the open sea; but we are totally without any.

We have asserted, without contradiction, that France can hardly put forty torpedo-boats *in line*, and among those torpedo-boats there are only eight of pattern 60. All the rest are of the 27 mètres pattern, and incapable of leaving the coast.

We need only mention the Russians as our superiors. They possess 200 torpedo-boats, 150 in the Baltic and 50 in the Black Sea. In our navy we do not find a single swift gun-boat provided with a light and powerful armament. Finally, even if our transports are not without their value, and could be of use in supplying our torpedo-boats and gun-boats with stores, when they come into existence, they are far too slow, and they barely secure a sufficient

supply for the victualling of a squadron or a colony! This was evident at Tonquin, as we were obliged to charter merchant ships at enormous sums, for this service.

It takes time to construct cruisers and gun-boats. Torpedo-boats could be had much faster. Everybody will agree that we need only apply to French and foreign trade to have a hundred vessels within a year. This would cost 25 millions (*frances*), the true price (very different from the official estimate) of an ironclad of the last pattern; and it would be a far more useful outlay than the completion of the six ironclads which are still building, and which can only be ready, at the earliest, in five or six years, by which time large squadrons will probably have been utterly condemned.

Supposing this wise course were adopted, and cruisers set in hand with all speed, how could they be employed? how could they be provided with parent vessels, or added to our squadron, which as things are now, would be unable to provide for their wants. Among the large ironclads composing the squadron, or which might compose it, we have seven vessels with a central citadel and a displacement varying between 7,000 and 8,000 tons. These are of the *Richelieu*, *Suffren*, and *Colbert* pattern. In the central citadel of these ironclads there are 27 *cms.* guns. The rest of their big guns and the light guns are on deck. Now everyone is aware that the guns in a central citadel have a very limited angle of training. Each time they are fired the citadel is so filled with smoke that it is impossible for the adjacent guns to be fired till it clears away. We may, therefore, conclude without unfairness and without raising the anger of the gunners, that if these citadel guns were done away with, the offensive strength of the ironclad would not, so far as the guns were concerned, be diminished by one half.

Having laid this down, let us resign ourselves to the sacrifice. Each 27 *cms.* gun, with its regular supply and its spare stores, weighs 70 tons; therefore, we should obtain the following reductions in weight for the ironclads:—The *Colbert*, having six citadel guns, would get rid of 420 tons; this would apply in like manner to the *Trident*, the *Richelieu*, and the *Friedland*, while the *Suffren*, the *Marengo*, and the *Ocean*, which have four citadel guns, would get rid of 280 tons. Getting rid of the guns means diminishing the crew as well. We could also proportionately reduce the rigging, stores, provisions, spare gear, &c. It would be advisable to remove the armour from the citadel, as it could be of no further use; but, taking the discreet pace at which work is done in our

arsenals into consideration, this operation would extend over several years. We must, therefore, give up the idea, for the time being, at all events; for it is more important to organise a fleet for immediate use when we are absolutely without one. We might, at any rate, begin partially or entirely to remove the armour from the citadel of one or two of those ironclads laid up in the ports, and not likely to be required immediately to join the squadron. Merely by the plan we have pointed out, we should gain 700 tons on the four first, and 580 on the three others.

Our conclusion may at once be guessed at. We wish an equivalent weight of coal to replace the guns and other weights we have unshipped. The central citadel being cleared out, would become a workshop for torpedoes, and our ironclads, although they would still retain their upper deck armament, would be enabled to provide for the wants of a certain number of torpedo-boats. The *Colbert*, the *Trident*, the *Richelieu*, and the *Friedland* could each take charge of 16 torpedo-boats, 64 in all. The *Suffren*, the *Marengo*, and the *Ocean* could each provide for the wants of a dozen, in all 86 torpedo-boats. We should thus obtain a total of 100 torpedo-boats—fifty fighting couples. If the trade managed to turn out more than 100 torpedo-boats, we could still easily provide for their needs.

Applying the system of suppressing the citadel guns to our ironclad frigates—to those, at least, that are still available, and to our coast-defence ironclads, we should form new floating depôts to supply the torpedo-boats with coal and various stores. Our cruisers could further take charge of several small boats. The number of the latter should be increased, for they are the chief destructive power of the present squadrons. Give us as many as possible, and even with our present naval resources we shall succeed in supplying them with everything necessary to their maintenance.

We did not reckon our three big ironclads in our calculations, the *Redoubtable*, the *Admiral Duperré*, and the *Devastation*, because these vessels, being far more powerful than the rest, are so encumbered and overloaded, and have so many auxiliary machines on board, such complicated armaments, such intricate mechanisms, that it would require endless time and labour to remove even a part of all this, to simplify them and adapt them to the use of torpedo-boats. These are the fine results of the construction of ironclads! Would that they were to be the last! A fleet thus composed is certainly not that of the future, or one such as we have described further back. Ironclads of inferior speed, of great draught, and

an enormous surface would be too easily destroyed by torpedoes; and the torpedo-boats for which they would provide supplies, would be too often employed in defending them against the hostile torpedo-boats. They must have strong protection to adventure a *mêlée*, but we are short of everything, and we must supply our need with as little delay as possible. Now what we ought to procure without delay, not to-morrow but to-day, are torpedo-boats. We must take whatever comes to hand to enable these to keep the sea, until such time as our views triumph and the weapons of future warfare are constituted.

If anyone were found to regret that we should remove those guns from the ironclads which are at times so useless, we would ask whether seven vessels escorted by a hundred torpedo-boats would not be far more formidable, would not constitute a very much more powerful force than either their former central citadel guns, or the new ironclad, however strong? The latter might strengthen them, but only when five or six years had elapsed, at the same cost as would supply a hundred torpedo-boats. There can be no doubt as to the answer. Add some of our cruisers to this fleet, and some of our transports which could re-victual at any moment, and, notwithstanding our present weakness, by dint of a little forethought, boldness, and ability, we shall soon be able to make a very good appearance on the seas. Of course, care must be taken to avoid accepting as permanent, the provisional arrangement we propose as a makeshift; it is a mere expedient to employ the existing ironclads, which are entirely condemned by us. Our ironclads once relieved of the guns in their central citadel, will take in an extra supply of fuel; the whole weight of the guns, stores and crew will be replaced by coal. They will, nevertheless, we repeat, be very heavy; they will waste a great deal, do very little work, and real transports should at once replace them.

Meanwhile, it is urgent that stations should be organised, both for our future swift full-rigged cruisers and our small squadrons of torpedo-boats and gun-boats. Toulon and the north of the Mediterranean, Ajaccio and Porto Vecchio towards the centre, Algiers and Biserta to the south; Dakar and the Gaboon on the Atlantic; Mayotte and Nossi-Bé on the Indian Ocean; Port Royal in Martinique, and the Pointe-à-Pitre in Guadeloupe on the coast of America; Obock at the entrance of the Red Sea; Saigon in the Chinese seas; Tahiti, with the seaport Phaëton near Taraveo, in the Pacific, would be these stations. We should not need to surround them with fortifications; our altered ironclads, our flotillas of small boats, alternately offensive and defensive, would be a better safe-

guard than costly fortresses, of which there are none, and which we must construct, if we are to guard the coaling depôts we ought to multiply all over the world. These would be first steps, the prologue as it were, to our naval re-organisation. But after these are taken, the re-organisation should not be delayed a single instant. Whatever modifications may be carried out, our ironclads cannot last much longer.

In future we must employ light flotillas, supported by rapid transports and independent cruisers, the forlorn hopes of naval warfare, which will roam at will over the commercial highways, whilst the gun-boats and torpedo-boats will alternately accomplish their work of protection and devastation. It is time to bestir ourselves. We are very much behind other nations. Germany, Russia, Austria, Italy and England are about to outstrip us, and when they have succeeded in doing so, our future may be at stake. Thirteen years ago we marched blindly to a military disaster. Enlightened naval men, whose disciple and exponent I have the honour to be, men of distinguished reputation and ability, tell us they are convinced that if we do not take care, that if we persist in believing in our imaginary naval superiority, we shall experience an equally terrible, and perhaps more irreparable catastrophe. The voice of these men, who only witness in favour of truth and their country, deserves to triumph over political clamour, and to be heard by France; for its salvation, its existence even, as a great nation, are at stake, and a few months of callousness, or of weakness, may suffice to compromise them for ever.

CHAPTER III.

COAST DEFENCE.

1.

In studying the future conditions of naval warfare, we have hitherto given our exclusive attention to the offensive side of the question. We have considered the best means of reducing the enemy's squadrons, ruining its commerce, ravaging its shores.

But if to attack is essential, it is furthermore necessary to be in a position to defend ourselves. The offensive-defensive system is the best, according to M. de Moltke; it would, however, be powerless to save a great nation from the dangers that might overtake it. Whilst meting out desolation and death to its adversary, it might expose itself to injuries that would be fatal to its prosperity, had no precautions been taken to ward them off. Even victory would scarcely make up for the burning of its seaports, and the

destruction of its commercial towns, accomplished, as we have seen, by a few torpedo-boats and gun-boats, meeting no obstacles.

France is vulnerable on three seas, but it is easy to break through this girdle of waves which, according to the magnificent expression of Berryer, beats against her shores to challenge her genius and awaken her to a taste for distant enterprise. It is no longer a frontier defending her, and we should show great carelessness if, after protecting our eastern provinces with an almost continuous chain of fortresses, we left the shores of the British Channel, the Mediterranean, and the Atlantic unprotected.

This is not to say that we should multiply fortresses as they have been multiplied in the Vosges and in the Alps. We do not lack fortresses; it will easily be understood, after all we have said about the useless results of bombardment, that we look upon walls as valueless. We are not advocates of fortified works. On land, as at sea, we repudiate those enormous constructions, as expensive as they are impotent.

The torpedo is a defensive as well as an offensive weapon; the task should be assigned to it not only of defending our arsenals and big military depôts, but that also of defending our commercial seaports, and the rich cities of our littoral, which at present are without protection, and are always liable to surprise, bombardment, or destruction by fire; it would fulfil the task far better than heavy structures, those masses of stone and iron impossible to maintain in every direction.

The first question we must determine is to whom the coast defence should be confided. At present it is shared by the army and navy. The defence of the arsenals is assigned to the *préfets maritimes*, who have the title of commanders-in-chief, and each of these commands all the troops, of whatever description, included in the limits of his arsenal. These limits are clearly defined. At Toulon, for instance, they extend on the east as far as Hyères; on the west to Ollioules; on the north as far as the second ridge of those hills known by the name of "La Côte Noire," which form a background crowned by forts overlooking the sea and the railway valley from Marseilles to Nice. The *préfet maritime* has full authority in the whole district of each fortress, and the naval guns placed under his orders occupy a certain number of the forts and batteries set apart for the protection of the arsenal. But these forts and naval batteries, however numerous and important, only constitute part of the defence of Toulon. Forts and land batteries complete this defence, and turn our great Mediterranean seaport into a vast entrenched camp.

Thus, to be more explicit, the batteries at Cape Sepet, and at the Point of Grosse-Tour are manned by marine artillery; whereas the forts of Faron, Six-Fours, &c. are manned by the military. But this co-operation between the War Office and the Admiralty does not exist in the case of our commercial seaports, where the defences, if there be any, are entirely in the hands of the military. It is the duty of the generals in command of whatever district these ports may happen to be in, to defend them against all attacks; even against a naval attack.

Doubtless, a clever general is fit for the task confided to him. Massena defended Genoa, blockaded on land and by sea, better than, or at least as well as, the most heroic admiral could have done. But are times not changed? A great many people think they are not. They are of opinion that sailors should be left at sea; that no advantage can accrue from stationing them in fortresses; that whilst their fleet manœuvres might, perhaps, be useful to repulse any attempt to bombard, on the other hand, as every bombardment is followed by landing, soldiers are more fitted than sailors to frustrate this second operation; that consequently the simplest plan would be to entrust the service of torpedoes to the navy, whilst leaving the guns to the army, by linking the marine artillery to the ordinary artillery. They would see no objection to placing officers in the seaports to take charge of the torpedoes and torpedo-boats, under the command of the general of the district. The naval force would be always on its natural element, the sea, where alone it has an indisputable right.

We know that the Germans do not share these views. After careful consideration they have decided to assign the coast defence to the navy, and their reasons for so doing are formed from what is, in our opinion, their correct appreciation of the warfare of the future. Convinced that the torpedo will, in future, be the principle weapon, both offensive and defensive, they have come to the conclusion that they must subordinate everything else to it; that harmony and unity may give them every advantage. Until within the last few years, with them, as with us, the torpedo played a secondary part, and for a long time their management was shared between the army and the navy. A corps of engineers was detailed to bar the entry to their ports, as securely and quickly as possible, with ground mines.

This work, differing entirely from the ordinary sappers' work, had, moreover, the disadvantage, in time of war, of diverting a great number of these men from their usual duties. It could, moreover, only hamper the navy, which would always prefer to keep

ports open as long as possible, so as to secure refuge in time of need.

The navy alone can combine the defence of a port against the enemy and reserve the option of entering it. A more extended use of torpedo-boats and of torpedo-batteries will reconcile all interests. The introduction of torpedo-batteries amongst the weapons employed by the artillery and engineers would have had the same disadvantages as those of ground mines. Thus it is evident that no commander of a naval station could dispense with a naval *personnel*. To fix the torpedoes, to maintain the torpedo-boats, to profit by their success, to keep the enemy at a distance, sailors must be employed. They are equally required for seaward forts, in the commercial ports, and to help the vessels and the seamen hired from the merchant service.

Henceforward the naval *personnel* and *matériel* are of foremost importance, and take the first rank in arming seaports. Then why not organise these places, so as to ensure this naval supremacy? It takes a sailor to recognise hostile ships, to judge of their strength, to understand their manœuvres, and discover the means to outwit them; therefore, why not leave to the sailor what no one else can do as well? In this, a general, however clever and distinguished, will never equal an admiral.

A fleet appears in the open; it executes manœuvres on the coasts; what operation is it preparing for? Towards which point and in what way will it direct its efforts? This is an important question, and not only requires great judgment, but the sailor's grasp of the situation added to his knowledge and experience of naval matters. And when it is a question of opposing the landing of the enemy, or some other enterprise, even with the guns belonging to the fortresses and the batteries, would not the naval gunner, practised in firing at moving targets and taking aim at ships in motion, be much more fitted than the artilleryman for this difficult task?

Therefore, to repulse the attack, as well as to provide the defence, the sailor should be employed. These reasons, which led Germany to confide the defence of her coasts to the navy, agree so thoroughly with the ideas we have set forth as to attacking these coasts, that we do not hesitate to adopt them.

It may be recollected that we have endeavoured to show that to besiege fortifications, bombard earthworks, shower bullets upon fortified walls or terraced works, will be perfectly useless in the future. Our arsenals will not be threatened; it is always possible, if not easy, to shelter those from the onslaughts of the

enemy; but our mercantile ports, the towns on our shores, the railways that unite them, are and will always remain exposed to surprise. How could the army protect or save them? We have further explained that when the hostile fleets come to ravage our shores, they will be composed of small light vessels eager for the darkness of night to aid their desperate adventures. It would be of little use if guns, however formidable, were to attempt to fire at them from the forts. By the very fact of modern advance, artillery must take the second rank in naval warfare, and become, as it were, auxiliary to the torpedo. The latter, easily carried on vessels not larger than the vessels of attack, continuously cruising in flotillas before the threatened points, alone can attempt to obviate the perils that beset them.

They can, further, when stationed in the channels, bar the way to the assailants. We therefore repeat that the gun has a subordinate part to play. It should support the torpedo, and not obstruct its action. To insure this end, the sphere of action of each should previously be most minutely laid down. At night, guns could only fire if the horizon were carefully lighted up and the enemy were discovered by means of search-lights, the enemy meanwhile doing all in his power to avoid observation. But it would be vexatious in the extreme if the assistance given to the gun hindered the manœuvres of the torpedo, either by illuminating those regions where the ground-mines were placed (which the hostile vessels would then easily avoid) or by indicating the presence of defensive torpedo-boats endeavouring to surprise and sink these vessels.

Will not this be the result, if we assign our guns to the military whilst the torpedo is assigned to the navy? Complete unanimity of action can only be secured by complete unanimity in the command; thus it would seem only natural that the corps employing the principal weapon, and on which definitely devolves all decisive operations, should also govern the accessory operations surrounding these. If the navy is the essential element in coast defence, in defending seaports and harbours; if it is impossible to do without it, if everything must be organised so that it should be well upheld and never thwarted, the Germans are right in giving it full and entire authority.

The navy alone can methodically and systematically organise defence, and, as the Germans hold, the navy alone can foresee the enemy's intention, guess the aim of his manœuvres, by means of its scouts appreciate his strength and his projects, and dispose or modify the plan of attack or resistance, aided by these observations.

Hitherto, France does not seem to have realised the paramount necessity of the navy in coast defence. This has given rise to deplorable mistakes, resulting, amongst other disadvantages, in the expenditure of immense sums with small profit, and in oversights which might be fatal in a critical moment. In constructing the coast batteries, the services they might have to render have not been taken into proper consideration. Splendid forts have been erected, but they are often so ill-placed, and at such an elevation, that it is easy to avoid their fire by keeping close in shore.

Up to the present date they are inefficiently armed, either because their guns have not been mounted or because they are not sufficiently powerful. No definite plan has been elaborated for the co-operation of the artillery when called upon to defend an attack on the sea-board. By night it is impossible to take aim, by day it is still more impossible to allow the forts to fire in every direction, for then, again, the operations of the torpedo-boats would be paralysed.

If the task of defending our coasts had been assigned to the navy, the use of the works which protect—or, rather, which were intended to protect—our ports might, perhaps, have been more seriously taken into consideration before they were constructed. And, if the matter had been attentively considered, half of those useless and expensive works would never have been begun at all.

A torpedo-boat, at a cost of 200,000 *francs*, protects a harbour better than a fort costing several millions. The saving would have been considerable. Our mercantile ports would certainly have been placed in a state of defence. But, as they were not, and could not, be included in any plan of warlike operations on the Continent, they were entirely left out of the question by the military, which merely gave them a garrison; and by the navy, which only thought of its own centres. Marseilles, Bordeaux, Saint Nazaire, Havre, Dunkirk, &c., are at the mercy of the feeblest assailant; nothing has been done to protect them from such a contingency.

In the war of 1870–71 a Prussian corvette captured a merchant-vessel at the mouth of the Gironde, and this grave insult has been so entirely forgotten that, although fourteen years have elapsed, we are still in as unsatisfactory a position as at the time it happened. If fresh hostilities broke out to-morrow the same would certainly occur, and with greater ease than in 1870–71, when our fleets were absolutely in possession of the sea. Now, any of the Powers with which we might be engaged have the means of disputing, and possibly wresting it from us altogether. But the navy could not be held responsible for this; with slow-moving squadrons it could not

overtake cruisers and gun-boats on the open sea ; and its authority expires at the estuaries of the mercantile ports, precisely where an enterprising enemy would direct his attack.

It is objected that coast defence does not solely consist in defending an arsenal from bombardment, an unfortified town from being burnt, a harbour from the bold descent of any adventurer upon the vessels that may have taken refuge in it. It is no less necessary to prevent a force from landing on our shores. Without doubt, this task should be assigned to the army ; but how fulfil it, if all the ports whence it could watch the enemy are removed from its control ?

At this point we may remind our readers of what we have said on the futility, consequently the improbability, of invasion in future warfare.

Landing a considerable body of troops on the enemy's territory will become more and more unusual. Even should it occasionally be attempted, it ought to be frustrated, not on land, but at sea, by sending small squadrons of torpedo- and gun-boats to scatter destruction amidst the fleets of transports conveying the hostile army.

Semaphores and telegraph-wires would secure the rapid concentration of these small squadrons, and our swift cruisers and scouts of every description would always maintain communication between our shores and any point whence a hostile fleet might engage. This would be immediately signalled, and the small squadrons sent in pursuit. If by chance, or by misadventure, they did not meet it on the open sea, they would still render most efficient service at the moment of disembarkation.

One can imagine the disorder and the confusion of the vessels assailed by the torpedo-boats, and the disarray the transports would be thrown into by being attacked at the very moment of disembarkation. Supposing that the enemy had chosen a point for landing protected by our artillery, the effect of the fire from the forts would be far less formidable ; and there, again, if they interfered with the action of the torpedo-boats, they would do a great deal more harm than good. The two operations should be so combined that the one should never be a serious hindrance to the other ; and this can only be attained by subordinating the less to the more important. As everything is possible, suppose we admit that the navy fails to prevent the disembarkation of the enemy. Then commences the task of the military. All the lines of rail, all the roads, all the fortresses dominating them, have remained in their hands ; they are, therefore, masters of the situa-

tion against an enemy with no other base than the sea, where its transports are incessantly liable to attack by cruisers or surprise by torpedoes. As we have shown, the military will easily get the better of the enemy, and the navy will second it by re-assembling more small squadrons again to attack the fleet of transports.

When the army and navy thus harmonise in a wise division of labour, each following its natural functions, by mutually supporting the other without trespassing on each other's province, the coast defence will be more assured, the army will be relieved of a task which it is by no means certain of being able to fulfil, and the interests of the navy will be much better attended to than they have hitherto been.

So we are among those who think it would be well to follow the example of Germany. It is, in fact, followed by the nations unhindered by the traditions of an old-fashioned navy—by Russia and by Austria. In Russia, the littoral is divided into districts of defence, placed under the command of the senior commandant of fortresses, who is named by Imperial decree. These commands are habitually given to naval officers, unless the fortress, although situated on the coast, is only of strategic value with reference to an attack from land.

Before the last war the shores of the Baltic had been divided into these districts, under the command of a rear-admiral. This organisation is developing more and more. Two companies of torpedo-men (which, for want of sailors, are supplemented by engineers), have been formed; one has St. Petersburg for its centre, and the other Odessa, and they are re-distributed over various parts of the coast in small detachments, having orders, in time of peace, to study the part of the country where they will have to operate in time of war. Meanwhile, flotillas of torpedo-boats go through manœuvres among the rocks, on the shore, so as to familiarise officers and men with this sort of navigation. We shall mention, further on, how the officers of the Customs are called upon to help in defending the shores. Austria faithfully imitates Germany, and has completely adopted the course in which the latter has so boldly preceded her.

Speaking to the delegates during their last session, Vice-Admiral Baron de Sterneek unfolded the plans he hoped to adopt for putting the Austro-Hungarian navy on a footing that would enable it to fulfil all the requirements of the future, and explained his reasons for rejecting the programme of his illustrious predecessor, Tegethof.

This programme had been drawn up at a time when ironclads were the preponderating naval force, thereby making the possession of numerous squadrons essential. Now this is all changed. Austria fully realises that the ironclad is outstripped by the torpedo-boat, therefore the Naval Minister has determined to divide the shores of the Empire into several districts, and specially to appoint a flotilla of torpedo-boats for each district.

Four flotillas of this description will suffice for the whole Empire. They will not leave the coasts. There will be sea-going torpedo-boats to escort the fleets, and these will chiefly consist of swift despatch-vessels; it is hoped that private yards will be able to assure a speed of twenty miles an hour to these despatch-vessels, and, of course, the torpedo-boats for the open sea will not be less swift.

But it will be the task of the coast torpedo-boats to secure protection for the ports and roadsteads. After Baron de Sterneek had explained his views, Count Hohenwart recalled the fact that in 1859 two French frigates before Fiume had sufficed to force the garrison of that town to quit it and to leave the shores undefended. For the future, hostile frigates will be prevented approaching Fiume by the torpedo-boats, on which Austro-Hungary places the utmost reliance to preserve her from all danger.

The navy seems, in her opinion, as in that of Russia and Germany, to be the best and only guarantee for the safety of her coasts against those powers overlooking the seas on any part of her territory. And France, which is washed by three seas, which may be attacked on three sides at a time, still believes herself safe from harm because her ports are surrounded by fortresses, where the guns are placed at such elevations that they would be unable to bear on a vessel passing close in shore, and because these each have a few badly-armed or unarmed torpedo-boats. It never seems to occur to her that if war breaks out she will be attacked on the whole extent of her shores now covered with flourishing cities, industrial establishments, populous villages, and rich villas.

She has never yet thought of dividing them into districts; of placing these districts under regular command; of studying each detail so as to fix the point of refuge or of action for the torpedo-boats; and of deciding how it will be possible to defend these chance ports against the enemy's descents. There is a great deal to be done in this direction, and only the navy can do it.

Like Russia, we should have companies of torpedo-men always engaged in scouring the coasts, in noting all its indentations, and making acquaintance with its creeks, bays, or any ambuscades

where carefully-hidden torpedo-boats might lie in wait for the enemy, like ants behind a grain of sand watching their prey.

When this first work is done, and all the places suitable to torpedo-boats have been explored, we shall next have to think of the means whereby they may be connected, either with the nearest semaphores or with the ports, so as to be instantaneously warned of any smoke appearing on the sea, or of approaching fleets.

The Austrian, whose rugged shores seem specially to require defence by torpedo-boats, did all this long ago; and every year vessels are sent to stations which are expected to supply them with water, food, and coal. I repeat that with us this has not even had a beginning. Outside our naval stations we have not a single dépôt with provisions or ammunition for our torpedo-boats. This state of things will continue until coast defence is specially made over to the navy, and becomes one of its principal objects. Preparation for war should be made with method, sequence, and precision, and it exacts technical knowledge and unremitting care.

In France it almost looks as if the general plan for organising our coast defence had been laid down by nature. As we are surrounded by three seas, why should we not appoint a vice-admiral with the supreme command of the naval force on each of them? He would be aided in his office, according to the extent of coast, by one or two rear-admirals carrying out the supreme command under his orders. We might at once find out which ports would be most suitable for their head-quarters; but as this subject touches on the more important subject of suppressing some of our naval stations, we prefer reserving it for another opportunity. It is sufficient if we add that under the vice-admiral and the rear-admirals each station for torpedo-boats would be commanded, according to circumstances, by captains or commanders.

We hold that all coasts thus surrounded by a continuous cordon of torpedo-boats could easily be made invulnerable. It is essential that this cordon should be continuous; that each flotilla should be linked to those adjoining it, that they may be in a position to unite in force, and without loss of time, at any spot where dangers may be feared. This could not be obtained by leaving them severally under the command of the military head of the district they might be in; a military official who might be totally unable to judge of the time, place, and circumstances most favourable to their action. For this reason we hold that the coast and its fortifications should be handed over to our navy, as these are henceforth destined to be almost the sole support of the attacking

torpedo, the defence for the depôts containing their stores and supplies, and for the stationary and self-propelled torpedo boats which they are protected.

Thoroughly to understand the aim and extent of this reform, we must enter into some precise details and explain the present organisation, with its mistakes, its merits, which might be improved by development, and its disadvantages. We shall endeavour to do this as clearly as possible.

At the present moment the defence of our naval ports is the only defence entrusted to our sailors. Each is under the vice-

admiral *préfet maritime*, holding the supreme command, and depends for its submarine engines upon the rear-admiral who is dockyard superintendent. This officer presides over the local commission, a sort of committee which studies all questions relating to submarine defence. This commission is composed of the dockyard superintendent, president; the chief of the stationary defence force; the chief of the movable defence force; the second in command of the stationary defence force; one of the lieutenants of the movable defence force; an officer of marine artillery, a naval engineer officer; an engineer belonging to the hydraulic works; and a lieutenant from a torpedo-boat as secretary.

Thus composed, the local commission takes the initiative in what relates to the submarine engines belonging to the defence. The *préfet maritime* adds any remarks he may have to make, and duly sends on the reports drawn up on these questions, to the Naval Minister, who then approves or disapproves of the measure submitted to his consideration.

This system has the serious disadvantage of creating an unadvisable antagonism between the *préfet*, who has the executive power, and the local commission, whose president is nevertheless his subordinate. Hence arise rivalries, more or less important; but very definite and very prejudicial to the service. The fulfilment of the measures advocated by the local commission, and sanctioned by the Minister, is under the control of three administrations apparently much more distinct than they are in reality: firstly, the stationary defence force; secondly, the movable defence force; and thirdly, the torpedo commission.

The defence of ports by ground mines comes under the head of stationary defence. The captain or commander, who is harbour-master, is also at the head of this stationary defence force; his staff includes a commander who is second in command; several

corps of boat-dispatchers, with junior and petty officers besides seamen, of the corps of *veteran seamen*. This corps is organised on a military scale with a complement of first and second class petty officers, as in the navy. The men composing it are former seamen, who, having completed their service, are accepted according to their certificates and recommendations. The seamen belonging to a port or to its neighbourhood generally, try, after they have served their time, to get into the corps of *veteran seamen*. They find it an easy berth, good pay and little work; they either marry or live the life sailors generally do as unmarried men; they get promotion and appointments that satisfy them, and as good retiring pay as if they had remained in active service. Only some of them are trained for the stationary defence force; for the captain or commander, who, in addition to this command, has the control of the harbour, also directs the berthing of the vessels both in the harbour and roads, and the other details connected with the general domestic economy of the dockyard.

The veteran seamen are worth very little. They live their regular or irregular family life on land, and only go to the arsenal during the day and during the dockyard hours. They are themselves more labourers than seamen; they have the disposition, the way of looking at things, the habits of dockyard labourers, and all the vices fostered by a generally idle life; for they have even less to do than the dockyard men, which is saying a good deal. In fact the best of them seem, under the style of cockswain, to be the head servants of the high officials abounding in our naval ports.

The ships do not shift berth every day, nor does the stationary defence force go through daily drill. Nevertheless the system is good in itself, and, as it is of recent date, it might easily be remodelled.

If it is finally decided to do away with maritime inscription, which has no further reason for existing in our modern navy (as service is obligatory, and as the system is only a source of administrative abuses), a principle must be laid down that every Frenchman having served his time in the navy must join the reserve, and be called upon to defend our shores in time of war.

The corps of veteran seamen might form a nucleus for the reserve. Under more energetic rule it might be kept up to the mark by preparing, in the naval stations, not only for the defence of these ports, but for that of our commercial ports, and by going through mobilising experiments as often as possible. The veteran seamen, better organised and better disciplined, would be the nucleus of the stationary defence force in what relates at least to

the *personnel*, which is quite as difficult to get together and keep up as the *matériel*. To prevent an enemy entering a port, to keep him even at a certain distance, the stationary defence force uses ground mines, submarine mines, and spar torpedo-boats. The ground mines, or sleeping torpedoes, are placed at the bottom of the sea, and they are exploded from a shore-station as the vessel passes over them. But if they are immersed at a greater depth than 20 to 25 *mètres* the result of the explosion is insufficient, unless the charge is enormous and, in consequence, unmanageable.

A torpedo, charged with 700 kilograms of gun-cotton, at a depth of 30 *mètres*, is only effective for a distance of 8 or 9 *mètres* above where it is placed; consequently, a vessel passing 9 or 10 *mètres* above this torpedo at the time of the explosion would receive little damage, and would certainly not sink.

Whether at the bottom, or moored at a certain depth, torpedoes have only a very restricted area of effect, which is illustrated by the fact that spar torpedoes may be fired at the end of a 7 or 8 *mètres* pole without the slightest damage to the boat upon which they are carried. But this limited power of action makes it very difficult to work these ground mines. They should explode at the precise moment when the vessel passes above them. To attain this two observers are employed; the one, placed at the continuation of the line of torpedoes, indicates the very moment the enemy crosses the line; the other, placed in line with the centre torpedo, sees exactly which torpedo the enemy is passing over, and presses the firing key.

If the enemy appears by day, the observers may, to a certain extent, be sure of success, always supposing that the smoke from the guns does not obscure their line of sight; but when the attack takes place at night, the electric light, if used to discover the assailants, may only serve to point out to them where the torpedoes are placed, and it seems very difficult to calculate on any success.

However, night attacks are what we must provide against, as they are more probable and more dangerous than any. Ground mines are no longer adapted to naval warfare. They require too delicate handling, and are, moreover, very heavy; it takes a long time to place them; their component parts are too expensive and elaborate, and they are anything but certain in their results. Their day is past, and they should be set aside.

Submarine mines are of two kinds; some are sunk about 10 *mètres*, and being disposed like ground mines explode in the

same way, by means of an electric current controlled from a shore station. They have the same disadvantages, although in a less degree, as the ground mines, and, therefore, should be equally rejected.

The other moored torpedoes, called contact torpedoes, are the best of all. They alone are worth retaining, and are just like submarine captive balloons. They are pear-shaped, and explode when a ship's bottom strikes them.

They float at a depth of four or five *mètres*, which admits of their being lightly charged with dynamite or gun-cotton; the handling is very easy; they are kept in their place by a mushroom sinker at the bottom of the sea, to which they are attached by a small chain; a water-tight chamber secures sufficient buoyancy in them to compensate for the weight of this chain, and to keep them vertical. They are moored either in a straight line or in diamonds.

The search-light would point out their position, which is certainly a disadvantage, as it points out the danger to the assailant. The electric light should only be employed to sweep the horizon, and perhaps to expose any doubtful ship to the defensive torpedo-boats or to the guns of the batteries.

But, with this exception, the contact-torpedoes, which are very light, very easily handled, and not heavily loaded, which do not, moreover, require two observers, and which other nations succeed in keeping charged and in placing rapidly, are certainly the right engine for the stationary defences. Unfortunately in France we are still casting about both for a definite model and for a method of mooring it quickly and well.

We need not again describe spar-torpedoes, we have already sufficiently explained them. It will be enough if we add that the vessels appointed to their use belonging to the stationary defence force are neither numerous enough nor swift enough. But this is a point to which we must return.

The movable defence force, reserved to prevent an enemy from approaching a port or reaching the channels where the stationary defence is in operation, are under commanders. Their staff of officers in each port consists of two or three lieutenants, each commanding a vessel, a supernumerary lieutenant, and an engineer officer.

Their subordinate *personnel* is similar to that of the navy. Their offensive power consists of torpedo-boats, and are furnished, or ought to be furnished, some with spar-torpedoes, and the rest with locomotive torpedoes. Whitehead torpedoes, adjusted and

kept in good condition in time of peace, are the best for these vessels, as they can be served out quickly to them in time of war. This is the department of the *torpedo commission*.

There is a torpedo commission in all our five ports, where it forms an off-shoot of the local commission. It is composed of the commander at the head of the movable defence force, a lieutenant from the stationary defence force, and an officer of naval engineers, member of the local commission.

The torpedo commission decides all points having reference to the Whitehead torpedoes, their preparation in the workshops, their suitable preservation, repair, and modification, according to demand, the impulse for their discharge, &c. We must at once state that the dual functions imposed on the commander of the movable defence force and on the lieutenant of the stationary defence force are much to be deprecated. They encourage the indecision and want of activity which hitherto have hindered progress in our ports.

Moreover, it often happens that neither the commander who presides over the torpedo commission, nor the lieutenant who is attached to it, have any knowledge of the locomotive torpedo at the time they assume their functions. It is only after lengthened practice that they master this engine, and thus all the practical working of the commission rests with the engineer and the petty officers of the workshops. The engineer is himself frequently changed, and has, moreover, too many and varied occupations to be able to devote much attention to the torpedo. Can we, therefore, be surprised if, in two, or indeed four of our ports, the Whitehead torpedoes can neither be prepared, adjusted or kept in order?

This state of things, insisted on by some, and denied by others, produced an incident quite recently which is very characteristic of the deplorable state of our maritime organisation. Anxious to avoid the reproach of inaction, Cherbourg hastily organised a series of torpedo manœuvres for autonomous torpedo-boats on the Lafisse system. This system increases the extra loading of the torpedo-boat by at least 1,750 kilograms, and gives 1,600 kilograms more than that hitherto adopted by the authorities at Toulon. These made objections to its adoption, but the Cherbourg authorities would not yield to them. Toulon again ineffectually appealed to the Minister, and orders were issued to organise the Lafisse system on the torpedo-boat 62. On the arrival of this torpedo-boat in the squadron, the board of inquiry condemned the change, and, delaying the issue of the torpedo-boat by at least two months, the former system had to be replaced at a

very considerable cost. One may well ask if the final decision on similar matters should not rest with the Minister, and whether common sense and duty are satisfied in trying to please both Toulon and Cherbourg.

In France we have a *matériel* for torpedoes, which must necessarily increase, notwithstanding the dislike showed by the naval administration for a weapon that has the serious disadvantage of upsetting all tradition and all official habits. Although still in an elementary stage, it represents property worth at least forty millions (*francs*), given up without discrimination to a variety of commissions, and to a fluctuating *personnel* devoid of responsibility, whose impotent efforts can only result in the most entire confusion.

Out of the 600 locomotive torpedoes we possess, 300 require reconstruction to be of any use; they are of obsolete pattern, and would be easily altered if our factories for repairs at Indret were not so inefficient. More than a year ago this alteration was allowed to be necessary, but barely four torpedoes have been tested there. The other 296 wander about between our arsenals and vessels, and are badly adjusted, badly cared for, and their results are in consequence doubtful. If doubt is thrown on what we have just stated, we need only recall certain experiments made in the squadron, and the lamentable state in which the torpedoes on a certain ironclad were found when they were returned into store. This is a most serious fact.

The more we study the problem of the torpedo-boat, the more convinced we remain that if its perilous task is to have successful results, the weapon it carries must be accurately determined; it is most difficult for a torpedo-boat having missed its aim to escape; the captain should not think of such a thing; he should only anticipate success; he should be convinced that when once his torpedoes are discharged he will only have to deal with a sinking ironclad.

Now this cannot be the case when we possess only one pattern of locomotive torpedo (the Whitehead), constructed abroad by a foreigner, known to all the world as well as to us, and so much neglected by us, that perhaps we may be allowed to say that we do not even know how to take care of it. We are at the present moment the only power without a special factory for the torpedo, where every effort should be made to improve it, and keep our improvements carefully to ourselves.

It appears that Germany has the right to boast that she possesses a pattern for torpedoes which is superior to that of any other nation.

England prides herself in the same belief; her new torpedoes have attained a speed of 24 knots an hour, and they are admitted to be effective at a distance of 540 *mètres*. Even Turkey boasts of a torpedo exclusively her own, and unknown to other nations. In the midst of this general emulation, France gives over the care of making inventions for her to Mr. Whitehead. None of our engineers have given their entire attention to the locomotive torpedo; even the theory of it is not as yet grasped by us, and nothing is more curious than the discussions to which it gives rise amongst those who have made it their special study; a great many people think they know all about it, although they have not mastered even the elements of it. It would be, perhaps, difficult completely to instruct all the officers that may become captains of torpedo-boats, during a sudden and always possible war, in the science of the torpedo; we could further wish that the new engine might be assimilated to the ordinary projectile. The day when it becomes nothing more than a shot, which may be kept without detriment in a locker, the freedom of the sea will be secured for every nation choosing to construct torpedoes. We are not near this as yet in France; not only do we neglect to construct torpedoes, but we do not even understand how to keep those of Mr. Whitehead in order.

The number of our torpedoes actually serviceable is insufficient to arm our vessels; and, if they were sufficient, the arrangements on board the ship for their discharge is in such an inefficient condition that it would negative their effect. Our impulse tubes are not gauged, the doors of these tubes are not water-tight on board the torpedo-boats; for the last two years we have been wanting to reconstruct the breach.

In 1884 a ministerial despatch gave orders to try a hinged breach on some of the torpedo-boats, similar to those which are so successful on other vessels; but this has only just been started, and it will be a long time before the arrangement will be completed. When it is completed, more trials will be necessary; when a report will be sent from one office to another, and bring no decision for, at least, a year after it is sent to head-quarters; and this (as is only too likely), if it does not go straight off to repose in a mouldy official report, whence it will never again emerge.

Almost every detail of the military armament of our torpedo-boats is absolutely neglected; even its formation is in its infancy. We have no impulse tubes, no accessory spare tubes; so that the smallest damage disables the equipment for an indefinite period. If anything is damaged by any accident, the loss is very

great: even if we had the necessary material it takes a considerable time to replace it. If we had spare gear any accident would be unimportant, as it could be repaired at once.

But our arsenals work for urgent, well-known, and well-defined needs; not for things that may be needed. We have already proved, but we cannot often enough repeat, that a large number of torpedo-boats may be seen in our ports which have been waiting for years for a discharging apparatus, which has never yet been taken into consideration; in case of war no one could tell what style of equipment would best suit them.

Thus, both as to manufacturing and as to perfecting torpedoes, we are notably and strikingly inferior to other nations, who have got their special workshops for the construction and readjustment of the engine of war, by a process that remains secret. This does not prevent their occasionally buying a pattern, that seems an improvement on the rest, from Mr. Whitehead; but they work chiefly for themselves, and, if we may be allowed to say so, they work steadily.

Following the precepts of the fable, English, Russians, and Germans trust no one but themselves. We trust entirely to Mr. Whitehead, and pour our millions into his cash-box; they are, doubtless, well spent, but would it not be better to expend them in a national factory? And we ought to take into account that some war might occur obliging Mr. Whitehead to refuse to supply us.

Would this supposition, even, be absurd? And yet no one seems to have thought of it. If it came to be realised, we should not have a single torpedo to put on board our vessels, unless, by hastily organising (and, therefore, under very disadvantageous conditions) this national factory, which we had done nothing to start in time of peace.

Finally, however perfect our torpedo-boats may be from the sea-going point of view, their equipment is still most incomplete, and in this direction, if hostilities broke out, we should find ourselves terribly disappointed.

We must, therefore, search out the weak points of our present organisation, and the remedy that should be at once applied to them.

8.

What is the reason of the state of things we have just described? We do not hesitate to say that it is owing to our having neither the working gear nor the necessary *personnel* for torpedoes; to the fact that there is no one in high places thoroughly convinced that

the torpedo is a weapon destined to play at least as important a part as the gun. The speech made by Admiral Peyron, in the discussion over the budget, conclusively proves this. What has been done for guns, and what has been done for torpedoes?

In comparing the organisation of the service of artillery and that of torpedoes, we clearly see the estimation in which the new weapon is held. The marine artillery has a special foundry at Ruelle, a special workshop in every dockyard, a responsible workshop, where guns are repaired and kept in order, and, lastly, a firing range at Gâvres, or even on the *Sovereign*, where the guns coming from the State workshops, or bought by contract, are tried. As *personnel* in charge of the construction, repairs, and preservation of the guns and projectiles appropriated for the service of the fleet, it has an inspector-general residing in Paris. This inspector, who is general of a division of artillery, is assisted by a brigadier-general, with the rank of adjutant to the inspector-general. Under the orders of these two general officers, besides two majors or captains, as aides-de-camp, there are two officers of high rank in the artillery, one captain, two draughtsmen, two overseers, with authority over the works, and an accountant.

Besides the special and unexpected inspections which the Minister may confide to the permanent inspector, and to the deputy adjutant-general, the latter has more particularly to proceed on periodical rounds of inspection. The permanent inspector-general of artillery and the adjutant take part in the deliberations of the Naval Board of Construction. The inspector-general has to consider all projects, designs, and instructions having reference, firstly, to the establishment, the construction, the amelioration and support of the *matériel* for the artillery both in France and in the Colonies; secondly, to the application and execution of experiments; thirdly, to the general inspection of *matériel*, and the use to which it can subsequently be put; fourthly, to the inspection of the manufactory of ordnance, weapons, projectiles, and *matériel*; and fifthly, to the practice at the ranges. He gives his opinion on all inventions in connection with the artillery, by order of the Minister, transmitted through the Board of Works, all the building and other matters in connection with marine artillery are overlooked by his staff, he does not correspond himself with the authorities in the dockyards or establishments outside the ports; the communications he may have to exchange with them are made in the name of the Minister by the Board of Control; finally he sends an annual report to the Minister on the general state of the department.

This powerful centralisation in Paris gives unity and remarkable

activity to the service. A director with a deputy has charge of the foundry at Brest; and a large *personnel* of a lower grade, both civil and military, is employed in the factory:

In each port the command of the artillery is given to a colonel, who equally has a numerous civil and military *personnel* at his disposal; it has charge, firstly, of all works relating to the artillery; secondly, of the workshops connected with the service; thirdly, of the trials of ordnance and powder; fourthly, of the arrangement and preservation of the ordnance and ammunition reserved for the armament of State establishments and marine batteries; fifthly, it has to store, issue, and keep account of all the articles in connection with the commission.

As we have just shown, this organisation is complete; and if it may be criticised on some heads, it certainly assures all the advantages for the artillery to be derived from order, method, and a clear view of the means towards attaining the object in view. Does anything similar exist for torpedoes? We shall see. As to *personnel*, this is what we find. In Paris, two lieutenants, under the immediate orders of the controller of the army; the latter is far too engrossed by the gigantic constructions which are unfortunately the order of the day, to think about torpedoes, and he only listens with half an ear to the observations of the two lieutenants; for he is not the least bound to pay any attention to them.

In the ports we find one engineer in charge of the torpedoes, and having, besides this, special duties in the arsenal; his time is more taken up in superintending vessels in process of repair than in looking after the small workshop apportioned to the torpedoes, where the *personnel* is merged in that of other workshops. Besides this engineer, or rather including him, there is a torpedo commission, presided over by a commander, who is at the same time at the head of the movable defence force. As this commission is made up of purely temporary members, it can neither have traditions nor sequence of ideas.

The commander of the movable defence remains two years; he comes knowing nothing, and takes a long time to learn, for he is unfortunately very often dull and timid. He does not venture to try experiments for fear of losses; he gives out that he is always ready, and when, thanks to the force of circumstances, he has got to know a little about his duties, he is sent off, or given the command of some transport, on which he quickly forgets all he has learnt. The engineer, on his part, is only too willing to give up the study of a weapon which can be of no use to him.

As to *matériel*, the supply of torpedoes is lamentably deficient.

First, we repeat, there is no workshop for them answering to that at Ruelle for artillery. As for the storing and repairs, they are done in the workshops in the dockyards, by a limited *personnel*, where there are no plans or works having reference to the future, and where urgent necessities are alone attended to, or losses repaired that may occur at the moment. The workmen are as unsatisfactory as the assistant-engineers placed over them. Mechanics are borrowed from various trades to work at torpedoes. There would be nothing to complain of, if these would remain constant to their new task. But they do nothing but move from one workshop to another—from that of the torpedoes to that having to do with the machinery for the ships, &c. &c. The petty officers are no less unstable.

In none of our five ports, if the need arose, should we find the plans necessary to the construction of the spare gear of a tube for discharging torpedoes.

After each loss the necessary measurements have to be taken on the disabled vessel.

For stores and spare gear no provision is made in our ports.

Finally, the torpedo commission has the merest pretence of a workshop, with a foreman and a few mechanics. This workshop is, however, the best at Toulon, for, by a happy chance, the *personnel* has not been altered for some time; but it is very insufficient, and will become still more so.

Thus, there is no torpedo service, or none to speak of. Vainly have young officers taken up the subject with enthusiasm, vainly have some of our engineers endeavoured to follow in their footsteps, vainly is everything tried on the *Japon* and in the movable defence force.

All these isolated efforts and unsupported attempts fail through want of encouragement and direction. Every project, work, and plan is sent to Paris; often they are very contradictory, and to pronounce among them all, to solve the problem, or, rather, to show the Controller of the Navy (who is profoundly indifferent) the way to solve it, there are only two lieutenants at the office; and these would be much the better for a fresh course on the *Japon*, or with the movable defence force, where progress is the order of the day.

(To be continued.)

Land Transport in the East.

By Major HARVEY KELLY, M.S.C., A.C.G. for Transport.

The transport service is the soul of an army, because alone it gives it life and movement.—DE GERLACHE.

It is not my intention to enter into the details of the various schemes for a transport service which have from time to time been hurriedly originated to meet emergencies, shelved as soon as those emergencies had passed, and re-organised when they occurred again; but to deal, as concisely as I can, with the different means of land transport used in the East—to sift the relative advantages of each working unit. Before doing this, however, I must be permitted to make an exception of the scheme—now adopted as the system—upon which the transport service of India is based, and give briefly its lines. This becomes necessary, in order to show that when the outlay on an organisation such as the transport of an army (which, practically, cannot be limited during a campaign, and must always admit of the greatest elasticity) is kept within a certain margin, the main difficulty is to secure the maximum available carrying power ever ready for extended operations, yet capable of being increased from some reserve source; in plain English, to make the money go as far as possible without impairing efficiency. This is too often lost sight of by the elaborators of, and the detractors from, schemes. Now although Colonel Low's—as the Indian transport system is generally called—laid itself open to a certain amount of adverse criticism, the fact of its adoption by such experienced authorities as the late and present Commanders-in-Chief of India, shows that it has gone nearer the realisation of what was wanted than any of its predecessors. Its weak point, if it is fair to call it so before it has been thoroughly tested by the ordeal of years, lies in the unreliability of its "Resource Returns"—those returns rendered by the native civil authorities in outlying districts, of the transport of every description procurable at three, ten, fifteen, and thirty days' notice. These reports must always be accepted with more or less caution; but there is no reason why, in time, they should not become every bit

as accurate as income tax or other schedules, where a good deal is left in the power of those making statements to suit themselves. It rests with the compiler's intelligence and knowledge of his district to cut down or increase the items, as the case may be. I will, therefore, dismiss this question of resources, beyond the ordinary requirements provided for, with the remark that, from personal experience, I am convinced that in a country like India there will always be great difficulty in obtaining a large quantity of transport to proceed outside provincial limits, no matter what returns are rendered by civil or other authorities. It will be forthcoming, I allow; but requisitioning not being recognised in the British service, a certain degree of moral pressure will inevitably have to be brought to bear in order to procure it. Taking the foregoing into consideration, the entire question of transport is reduced to two salient points—

(i.) Whether it is better to maintain an enormous amount of permanent transport at a proportionate expenditure, and most of it lying idle during peace time? or—

(ii.) Keep up, at a comparatively small cost, a nucleus sufficient for all ordinary requirements, to be expanded, at an increased outlay, when necessity arises?

There is a third expedient, the "retaining-fee" plan, but it possesses palpable disadvantages, is costly and inefficient, besides giving a loop-hole for fraud. On the first two queries, I think I may venture to assert, hinge the transport difficulties in the East (there is no analogy with those in Europe), and, all things considered, the plan contained in the second is the most reasonable. There must always be a temporary hitch in efficiency while fresh transport is being "licked into shape," but this can be done while the trained portion is at the front; and a permanent regimental system (*i.e.* each corps fully completed with its own uninterchangeable transport), though theoretically perfect, would soon swamp the army estimates altogether. It would, no doubt, be effectual, but is simply out of the question from a money point of view. I must ask the reader to bear all this in mind while considering the following summary of Colonel Low's, or, as I shall in future call it, the Indian Transport Service, scheme:—

(a.) This "gives one-half transport on the service scale to the troops protecting the different frontiers, and to certain forces which will be held ready equipped for either local service or for despatch to a distant point." The collective strength of this force, with one-half transport in regimental charge, is about 50,000 fighting men.

(b.) It provides for the training of officers and men both with regiments and at depôts; a most necessary detail, as will be seen hereafter.

(c.) It divides the country into depôt circles, at each of which a certain amount of permanent transport is maintained on a peace footing, and utilised for the movement of troops both in cantonment and on the march from station to station.

(d.) It secures the mobilisation of 10,000 fighting men in the Punjab and Bengal respectively; 6,000 men in Bombay and 5,000 in Madras; and at the same time gives power of mobilising a force of 18,500 men at any seaport or distant point, without encroaching on the frontier transport.

(e.) It maintains the system of resource returns for each circle before alluded to, in order to supplement the standing transport in the event of war. This, it is hoped, will eventually develop into a recognised system of registration of carriage, &c. as in Germany.

(f.) It creates a distinctive staff of specialists, so to speak, officers and subordinates, recruited from those who have undergone a regular course of instruction, and maintains a force of trained attendants.

(g.) Its annual cost, including equipment, building, &c., and other items unnecessary to mention in an article such as this, comes within Rs. 85,00,000, or, roughly estimated at the rate of exchange, some £800,000.

As some doubt may exist regarding the term "half-transport," I may explain that by this is meant that portion which is *permanently* retained in the regimental charge of certain corps, carriage being calculated on the cold-weather service scale with 180 rounds per man. These corps are those which form part, for the time being, of the following "little armies":—

- i. A brigade of all arms in Sind.
- ii. The troops in the Peshawur district.
- iii. Portion of the army in the Punjab.
- iv. The small force in Rohilkund.
- v. The Punjab Frontier Force.
- vi. The force in Eastern frontier.
- vii. The force in Burma.

In fact, in those districts where trouble is most likely to occur.

The ambulance, which includes sick-carts, dhoolies, &c., with the bearer corps, also comes under the transport supervision.

Having now, I trust, given an intelligible outline of the system upon which the Indian transport service is conducted, I proceed

with my original intention—a description of its working units. Leaving railways and rivers out of my text, transport in the East is divided into two parts.

I. Pack (which includes “coolies,” as well as every kind of beast of burden).

II. Wheeled.

Under the first come elephants, camels, mules, ponies, donkeys, bullocks, coolies.

Under the second, army transport carts (bullock), light carts, mule-trolleys, water-carts, country-carts, ekkas.

As pack transport is of the first importance, its components being also available for draught, I will take these *seriatim*.

The Elephant.

I have placed the elephant first, not because of his superiority as a means of transport, but on account of his size and expense, for of all transport animals he is the most costly to catch or buy and keep. He certainly possesses immense strength, and can be put to a variety of uses where sheer weight and motive power are essentials; but, except when employed on specific duties, such as the carrying of the howdah-khana, or extra heavy camp equipage of His Excellency the Viceroy, or the lifting of logs in the timber-yards of Rangoon, and being marched through countries where fodder of all kinds is easily and cheaply procurable, I doubt whether he really ever “pulls his weight,” in a monetary sense. I am speaking of the elephant as a strictly pack-animal, for, although he is used to draw the guns of heavy field-batteries, he is not naturally adapted for draught. For transport purposes only female elephants are purchased (there are, however, still plenty of males in employment), and these should not be less than twenty or more than thirty years old. They are divided into two classes, according to height, 8 feet and upwards being first-class, all under 8 feet second-class animals; but no elephant should be below 7 feet, measured in the same manner as a horse. A straight flat back, with no tendency to arch, and a stout barrel, are points to be preferred to size when selecting a beast. The regulation scale of weights to be carried lays down 1,200 lbs. for a first-class, 960 lbs. for a second-class elephant; but this cannot be taken as a hard and fast rule (indeed, the same may be said of all pack-animals, judgment in this respect becoming often strangely blurred on service); for I have seen a huge elephant, 10 feet high, labour more under a 1,000-lb. load than one, barely 8 feet, carrying over 1,200 lbs. It needs a practised eye, when once a load exceeds 1,000 lbs.,

to avoid the very grave fault of overloading. I have met men who would take the greatest care to husband the strength of their chargers, calculate the weight they had to carry to the nicety of a race entry, who, where an elephant or camel was concerned, seemed to think that as long as there was any *room* left on the poor beast they could heap on kit. This, not from cruelty, but ignorance—ignorance amounting to culpability on the march. As a rule, both British and Native soldiers prefer elephants to all other *Pack* carriage, because they give them less trouble than any other animal, and fewer are required. Two elephants will carry three large D. P. European privates' tents and ten ordinary sepoys' *pāls*. All the men have to do is to fold these tents (this used formerly to be left to the transport attendants) and hand their components or other species of load to the "mahouts," or drivers, the elephant himself picking up any light article, such as buckets, &c., with his trunk. Moreover, when laden he can, if necessary, start off independently, all other pack-animals being in groups of threes; and, not being addicted to sudden stampedes, he plods along steadily to his destination. From the regimental officer's point of view, therefore, the elephant very likely is regarded as the most excellent pack-transport, but, from the State's, I repeat my doubt as to whether he is worth his keep in any numbers. That some should be retained for defined purposes is fully recognised by the Indian Transport Service scheme, and elephants are, by this, chiefly allotted to Burma, the Eastern frontier, and Oudh, where food is plentiful and cheap. Having given the advantages of elephants, I must state my reasons for qualifying them. Although they live, in many instances, over the century, they are in reality delicate creatures, and require as much care and "coddling," at times, as a sickly child. They are subject to all manner of diseases, of which colic, "lungun," or worms, "chowrung," the effects of chill, sore back and feet, and musthee (in males only), are the most common; while they are not exempt from apoplexy, foot and mouth disease, and other ills that the animal flesh is heir to.

On service, especially when food is bad and scarce, the seeds of "zerbad," a kind of dropsy, or debility, as fatal in beast as consumption in man, are often sown. As might be expected, they suffer and have to be dosed, in proportion to their bulk; and "mussalas" (as native veterinary medicines are called) mount up to a very considerable item in their keep. It is true that these "mussalas" are principally composed of ingredients which add zest to a Mussulman's curry—mahouts are mostly Mahomedans—but, making due allowance for the driver sharing them with his

beast, an elephant disposes of an amazing quantity of condiments in the year. Then the male elephant when "musth" (the first sign of this is a discharge from the "ched," or temple hole) is both useless and dangerous while the fury is on him, a month or more; hence the restriction to females. Sore feet and backs, especially the former, are an unending source of anxiety, and an intelligent mahout will, whenever he can, avoid hard roads and keep on soft ground. Still, you cannot always pick your road, and sore feet and ulcers at the margin of the hoof-pad are frequently the result of rocky paths, and punctures by sharp stones. This necessitates the application of an astringent known as "chobe" by the natives, for if neglected a worse type of foot soreness ("thullee") ensues; and I have seen elephants' feet worn down "at heel," like an old shoe, after a prolonged march with guns. This "thullee" stage of foot-soreness is, however, seldom reached, except when employed for draught.

Again, the Transport Regulations lay down that "when elephants show signs of sore backs, camels or carts are to be employed in the proportion of three camels or a three or four bullock-cart to each elephant, to carry its load." This is not always possible, so, prevention being better than cure (an axiom which the transport officer must forever bear in mind), constant examination of the "guddela," or pad next the skin, and of the gear generally, is necessary. Before each day's march, the back and load should be critically inspected—another axiom, which applies to all pack-animals. Then the effect on an elephant of being taken through water in a heated condition is often very serious, producing the disease called "chowrung," before mentioned. "A dram of liquor may prevent the disease, but months of care will hardly cure it, and the animal will be more predisposed to it for the future" (Indian Commissariat Code, 1883.)

From all this I think it will be seen that, though a powerful beast, I am not far wrong in describing the elephant as a delicate one.

I have left the question of feeding and watering to the last, and, although the fixed allowance of food may surprise those who have never had anything more to say to the diet of an elephant than to give one a bun at the Zoo, I may mention that the Government scale is really a very moderate one. An elephant in good health will eat considerably more when he can get it. He does so when "at graze" in the jungle, munching the young branches of trees, filling himself with reeds, rushes, and other tank fodder to an incredible extent; and I believe I am correct in stating that Mr.

Sanderson, perhaps the greatest living authority on elephants, once tried the experiment of giving a beast as much green fodder as it could eat; and, without doing work, it disposed of 800 lbs. a day for a whole week! A first-class elephant's daily ration consists of 15 lbs. of grain (rice or atta), 200 lbs. of dry, or 480 lbs. of green fodder, with 2 oz. of salt; a second-class elephant receives 15 lbs. of grain, 150 lbs. of dry, or 320 lbs. of green fodder; and in addition to this, a daily issue of 10 lbs. of straw is made for each elephant when rice is given. This is twisted into a kind of nest by the mahout, the rice thrown into the cavity, and the whole popped into the animal's mouth to chew slowly. If no rice is allowed, then coarse "chupatties" are given instead. As to water, an elephant cannot go without it for more than twenty-four hours without injury, and should, when practicable, be watered twice a day, as well as washed and allowed to wallow in a pond after every march. When it is calculated that food to the extent stated has either to be procured at each halting-stage, or else *carried* (one elephant's load being little more than a *day's fodder* for two others), their utility as a means of transport in unknown or barren countries is open to question. The cost of their keep varies, as a matter of course, with the locality, but, all told, it averages some £10 to £12 a month. This is sometimes reduced by the sale of ivory, for tusks have to be cut when they become cumbersome, or are found to be splitting, in the latter case metal bands being added. This cutting requires care, or the nerves may be exposed, and render the animal liable to severe tooth or rather tusk-ache; and the usual method of judging the place to cut the tusk is to take a line from the eye to the top tooth (where the upper and lower gums meet), measure this length along the tusk, and saw off all beyond.

It may be accepted as a standing order that no transport animals should be sent on the march without a supply of simple veterinary instruments and medicines handy, and I conclude the chapter on elephants with those recommended by Veterinary Surgeon J. H. Steel A.V.D., as they comprise everything that is likely to be wanted, and are easily obtainable. "Always have the following implements and medicines with elephants on the march and in camp: a wooden gag, an enema syringe, an abscess knife, a long probe, country spirit, assafoetida, common salt, ginger, chiretta, sulphate of iron."

Camels.

These vary so much with the local breeds, that, if space permitted, it would be necessary to describe the merits or demerits of

each kind in detail. Again, as with horses, the changes can be rung on thoroughbred, three-quarter, half, and underbred animals ; so that as there are horses and horses, there are camels and camels. In purchasing or hiring, therefore, for Government, only general rules can be gone by ; Punjab, Afghan, Biluchi, Jowaki, Rohilcund, and Maharatta ones being the best to select from, although Sind, perhaps, at one time, furnished the largest supply in proportion to its area. Indeed, this province may be regarded as a huge camel-breeding farm, from which all manner of beasts are turned out. Camels are not indigenous to southern India, and prosper but indifferently there. The reader must not forget that I am dealing solely with *pack* animals ; trotting camels for "shutur sowars," "camelry," and other riding purposes, being outside the range of transport proper ; but, as regards treatment and general principles, what applies to one class applies equally to the other. Unlike the elephant, where only a guess can be made at his age, that of a camel can be readily tested by his teeth up to seven or eight years, and Government camels should always be bought between 6 and 8, and be never less than $6\frac{1}{2}$ feet at the shoulder. When seated, the tendons of the hind legs, above the hock, should be well defined, and show no quivering uncertain motion when the animal rises. Wide chest, large knees and hocks, short thick legs, well rounded stomach, without any "tucked-up" appearance, are points to be looked for, but which vary with the breed ; while the hump plays an important part in the selection of a camel, as the front of the saddle fits round it. When in bad condition—and camels, if neglected, fall off quicker, I think, than any animal I have ever had to deal with—the vertebra crops up prominently, and so, as with the elephant, roach-backed specimens should be avoided. The regulated weight which a Government camel is supposed to carry is five maunds, or 400 lbs. ; but the remarks I made when speaking of elephants, are equally applicable to camels. I have seen a fine-looking Government beast in a mountain pass, literally groaning under his 400 lbs. of ill-balanced and indifferently-packed load, while a string of Brahui camels (private property) stepped gaily along, each carrying eight maund bags, or 640 lbs. ! Veterinary-Surgeon Oliphant, speaking of the Kuram Field Force, says : "The camel has proved the most unsatisfactory as a beast of burden, *at least in Government hands*, in the past campaign" (the italics are mine) ; that is to say, before the introduction of a specially-trained transport service. Many men said the same thing of them in a sweeping sense ; but they evidently were unmindful of the difference between cause and effect.

In reality, camels are an invaluable method of transport (although, as I will presently prove, they, too, are delicate, necessitating much care and attention); but they require to be thoroughly trained and accustomed to European troops. The British soldiers' hands do not err on the side of gentleness as a rule; and it is scarcely surprising that when he hauls at the nose rope of a camel as he would at a cable, lacerating the poor beast's flesh with the wooden nose-peg, and yelling in choice expletives to the brute to *Baito!* ("Sit down"), the latter resents the treatment and tries to break away. Once free, especially if his load consists of tinkling cooking pots, he proceeds to kick it off by a series of bucks, and, head well in the air, clears away to the jungle. This sort of thing gives the camel a bad name.

Then there is the popular fallacy that the camel takes in a supply of water for a voyage, like a ship. He *can* go without water for a long time, it is true, for Sir Charles Wilson, in his *Korti to Kartum*, states that on the desert march they did so for from six to seven days; but the consequence was that the animals were nigh useless. This is not to be wondered at, for the same authority, further on, says: "The result almost justified the *mot* that we thought we had found in the camel an animal that required neither food, drink, nor rest; *we certainly acted as if the camel were a piece of machinery.*"

Sir Charles Wilson here unconsciously hits the nail on the head, for ignorance of how to treat the animal, and absence of proper supervision, cause as many, if not more, casualties than the actual hardships of a campaign. Of course, if you cannot get water you cannot give it; but, as a matter of fact, camels should be watered once a day in cold, twice a day in hot weather, and should also be allowed to drink, if they want to, whenever an opportunity occurs on the march. Yet Sir Charles Wilson speaks of these animals "having been previously accustomed to water every second or third day," as if that was their normal practice. "In the plains in August, when the weather is wet and cloudy, they often drink little or nothing," on the other hand writes Lieutenant Leach, R.E., a good authority; but he adds, "The surwans make them drink by pouring half a mussak of water down each camel's throat"; and these surwans, or camel-men, know from personal experience and interest what is best for their animals. In private hands, with hill-men particularly, and even in the plains of India, camels are made to do an immensity of work, but their value is appreciated, and they are cared for as an Arab cares for his horse. With Government cattle it is different, for the hireling, "because he is an

hireling," will not take the same trouble unless he is properly supervised. Camels, too, are cheap to buy and to keep. There were 25,594 camels bought by executive commissariat officers, between the 1st September 1879 and the date when purchases ceased, for the use of troops in Afghanistan, at an average cost of Rs. 89 Os. 8p., or about £6 a-piece. In ordinary peace time these would sell for Rs. 50, or less; and this cannot be considered dear when, in Egypt, from £15 to £30 were asked for Aden and Soudanese camels.

Then the Government scale of food, though sufficient, is not excessive. Under this, a camel gets daily 4 lbs. of grain, 25 lbs. of dry, or 40 lbs. of green fodder, or 20 lbs. of "bhooosa," a kind of bran or chopped dry fodder, with $\frac{1}{2}$ oz. of salt; that is, to say, about one-seventh of what a first-class elephant eats. Moreover, when "at graze," and not being worked, camels pick up their own living in the jungle—an occasional tonic, to keep them in tone, being all that is necessary. You cannot give them too much grazing; but Lieutenant Leach puts "six hours a day, on fair ground," as sufficient to get along on without grain. As I before stated, camels are subject to a variety of ailments. Of these I place sore backs and wounds before the others, although not a disease, as being the most common, and, in nine cases out of ten, the result of badly-fitting saddles, ill-treatment, and neglect. Besides, though not medically very serious, they are practically so. The moment the slightest sign of a sore back is visible the surwan should be ordered to teaze the stuffing, brace up the wooden framework of his saddle, and, if necessary, add a pad of rag, so as to make the lining exactly fit the shape of the back. As saddles are not taken off for an hour or so after arrival in camp, to allow the animals to cool gradually, a sore will often escape notice unless the backs are carefully inspected, after the removal of the gear, by a transport officer or N. C. officer—a duty which should never be left undone. A hired surwan will work a camel with his back raw, and always skimp that essential, the grooming with a currycomb; he seemingly has no bowels of compassion for his beast.

Of the regular ailments, the commonest are—abscess from low condition, bad blood, &c., colds, colic, purging, rheumatism, mange, to which may be added lice, and "mush," in males, although the last does not stop the working of the camel as it does that of the elephant. The remedies for these are well known to all who have to deal much with camels, the most effective being only learnt by experience. Local nostrums—for natives are very

conservative, and hand down their recipes from generation to generation—should be used with caution. They are sometimes excellent and simple, such as “neem,” or other tree leaves, but too often of a very drastic nature. A “salutry,” or native “vet.,” dearly loves firing, and, where camels and bullocks are being treated, thinks nothing of scorifying any space he can find vacant on their quarters or shoulders. Indeed, the marks of firing, unless recent, would not tell against the purchase value of a camel; but, like all strong measures, the iron loses its efficacy on its second application. With riding-camels it not unfrequently happens that the animal drops suddenly, to all appearance dead. Either “his heart or wind is split,” according to the natives. I remember once a camel “flopping” with me in this manner, as I was hustling him along to save the daylight. I thought it was all over with the poor beast, and that the “jut” (Sindhi driver) and I would have to bivouac for the night where we were. He was more sanguine, however. He first appealed to the brute, in endearing terms, as his “soft-eyed Rosebud, his Sapphire,” &c., to rise up, at the same time blowing violently into its nostrils. This proving of no avail, he proceeded to slice his ears into ribbons, and kick him in the stomach, which had the effect of apparently bringing him to life again in about half-an-hour. It was his wind, not his heart, which had “split” in this instance.

Among the more dangerous diseases requiring skilled treatment may be categorized—pneumonia, megrims, hydatid cysts, foot-and-mouth disease, anthrax fever, the first and last being very deadly.

Though in a lower ratio than the elephant, but for the same reasons, troops like camels as a means of pack-transport, when, as I said before, they are well trained and attended to by reliable professional surwans. For the larger kinds of tents—indeed, for all tents, when once the men have learnt to fold, pack, and load them as they ought—they are perfect. Two camels will carry one D. P. British Privates’ tent, which weighs between 700 lbs. and 800 lbs.; three, two staff sergeants’ tents; one, two sepoy’s pāls, complete. By a few simple, easily-learnt twists and knots in the loading rope, and proper placing of the bamboo-poles alongside the “pillan,” or saddle, tents can be securely fixed, and yet unloaded in a few minutes. The teaching of packing and loading, and imparting a knowledge of the various weights and components of camp equipage, and other paraphernalia connected with an army on the march, is most necessary, for without this knowledge no regiment or corps can

ever squeeze the full carrying power out of its transport without distressing it.

The subject of packing and loading is too lengthy to embody in this article, although it is intimately connected with it. Suffice it, therefore, to say that a regiment cannot have too much practice in this important branch of its training; and this practice should not be left, as heretofore, to be perfected at the end of a long campaign, with a corresponding length of losses among the transport animals, but carried out in the "piping times of peace," as is now done in India. I have seen a corps hours getting away on its first march, and then leaving a lot of odds and ends on its parade-ground; while another had struck, folded, and loaded its tents, packed kits, and marched off within thirty minutes. The latter had been taught, and had system; the former was fresh from England, raw, and possessed no previous training. The deduction is obvious.

But to return to the camel. He possesses another advantage, which the soldier is quick to recognise when he gets the chance. He can be laden with a pair of "khajawahs," or two coir-webbed baskets with wooden framework slung across the saddle. Into these, articles can be flung promiscuously and without trouble; indeed, a Punjabi usually transplants his family and Penates in them. The pace of the camel is fairly good, but circumstances, the length of the convoy, the state of roads, contour and disposition of the country, so govern all transport progress, that it would be useless my laying down any fixed rate of speed. I would calculate roughly at two-and-a-half miles an hour, including stoppages, for a convoy of ordinary dimensions. Summed up, the advantages of transport considerably overbalance the disadvantages; but to secure the full benefit of these advantages, properly trained surwans are a *sine quâ non*. One surwan attends to three camels.

Mules.

Viewed from every point, I consider the mule to be the best description of animal transport in the East or elsewhere. He stands *facile princeps*, and I do not think that anyone of experience in such matters will be prepared to contradict this. He is strong, hardy, capable of great endurance, comparatively cheap, adaptable to a multiplicity of uses, such as mounted infantry, mountain screw-gun batteries, &c.; and can climb over rocky ascents like a goat. For flying columns, rapid raids, and all cases where troops have to march light and quickly, he is by far the most satisfactory; for

where a horse would almost starve a mule will thrive. I cannot do better than once more quote Veterinary Surgeon Oliphant's experience of the latter in the Kuram Valley. "The digestive powers of the mule," he says, "are marvellous; whole dry barley or Indian corn being thoroughly assimilated, but few grains passing undigested with the fæces, while nothing in the shape of fodder comes amiss, be it 'bhusa,' dry grass, highly redolent of turpentine, or coarse rice-straw. On a modicum of green fodder he waxes fat, and resents the imposition of a load. Owing to his straight back and absence of 'wither,' or prominent spine when in good condition, it is easy to fit a pack-saddle, and his tough feet require no shoes in the stoniest country. As a weight-carrier he is unsurpassed, in comparison to his size, by any animal, even the camel or elephant. The load for a Government mule was supposed to be two maunds (160 lbs.); but it was no unusual sight to see strings of 'local' mules, many the property of 'Tagis,' or inhabitants of the Hariab valley, or 'Turis' of the Kuram, animals from thirteen to thirteen-and-a-half hands high, carrying four or five maunds of grain or flour, or say from twenty-three to twenty-nine stone weight." A load of four hundred and six pounds, I allow, seems scarcely credible, but it is quite possible; and in this case there was probably no extra weight of saddle, for a "sooncha" pad, as used by natives, is a trifle compared to the 40 lb. Government gear. I myself once, at the commencement of a march with a battery of artillery, stopped a mule which was dragging back his two leaders—for they are always grouped in threes. I ordered his load to be taken off, and had it examined; when I found it to consist of two boxes containing spare shoes and nails belonging to the farrier, each weighing about 200 lbs. Yet the poor beast was stepping out well, although he naturally could not keep pace with the others, loaded with only 160 lbs., the Government allowance exclusive of gear. That there is a great difference between the different breeds of mules, the graceful Arab-blooded Andalusian, the sturdy beast from the Pyrenees or Poitou, the stout miller's mule of Flanders, the African, and the hammer-headed Jhelum animal, no one can deny; but for prosaic transport purposes it matters little what their pedigree is, so long as they are physically fit and of the proper shape.

For transport, Government has decided that no mule should be less than twelve hands two inches in height, fifty-six inches in girth, and not under three or more than eight years old; but in purchasing fresh mules "at least two inches larger girth measurement must be looked for all round." This margin is advisable

because the scale of age and Government measurement refers to beasts in hard work.*

The general instructions for transport officers when purchasing artillery and transport mules, condense so clearly the requirements, that I need scarcely make an excuse for quoting them. They are as follows :—

i. The back of a good mule should be straight from withers to croup.

ii. An arched back is better than a hollow back.

iii. High withers is a fault, but not so bad as high croup.

iv. Many excellent mules are cow-hooked.

v. The action should be such as not to oscillate the back.

vi. A long swinging walk is not good action for a mule, as it unsettles the load.

vii. The hock is the most frequent seat of disease.

viii. Mules for artillery should, as a rule, be between 14 hands and 18·2.

As an average Rs. 100, or about £8, should buy a transport mule in India; but, unless mule-breeding is very much increased there (with judicious management on the "result" system and no overgrown extravagant Government establishments it might easily be so), the prices of these animals are likely to rise rather than decline in the future. Taking the same dates, viz. 1st September 1879 to that upon which war purchases ceased, I find 6,910 mules were bought at a cost of Rs. 95,165, or an average of Rs. 100 9 annas each. However, Rs. 150 for first-class transport mules, R. A. ones ranging from Rs. 180 to 250, would not be too high a price to pay, provided they came up to the standard. By "first-class mules" I mean those over 18·2 hands, as for Government guidance

* The following scale of age and girth measurement will be a guide in purchasing:—

<i>Artillery—</i>			<i>Transport—</i>		
Height.	Age.	Girth.	Height.	Age.	Girth.
14·1 hands	6 years	66 inches	18·1 hands	6 years	61 inches
	5 "	65 "		5 "	60 "
	4 "	63½ "		4 "	59 "
14 "	6 "	64 "	18 "	6 "	60 "
	5 "	63½ "		5 "	59 "
	4 "	63 "		4 "	58 "
18·8 to	6 "	63 "	12·8 "	6 "	59 "
18·2 "	5 "	62½ "		5 "	58 "
	4 "	62 "		4 "	57 "
<i>Transport—</i>			12·2 "	6 "	58 "
18·2 hands	6 "	62 inches		5 "	57 "
	5 "	61½ "		4 "	56 "
	4 "	61 "			

they are divided into two classes, the same as elephants; all 18 hands 2 inches and upwards, together with all draught mules, being rated as first-class, those under that height as second-class. A first-class mule is allowed a daily ration of 5 lbs. of grain, 15 lbs. of dry or 30 lbs. of green fodder, with $\frac{1}{2}$ oz. of salt; a second-class one, 4 lbs. of grain, 13 lbs. of dry or 25 lbs. of green fodder, with salt. This allowance is increased by 1 lb. of grain when on the march and in hard work; but even then it cannot be looked upon as exorbitant, while, as can be readily understood, it undergoes queer vicissitudes on field service—always on a declining scale. The question of shoeing mules is one often raised, but the rule that for pack they need never be shod, though for draught they may require shoeing all round according to the country, is a safe one to go by.

When we come to the diseases of mules, these may be described as identically those of horses, but that the former are better able to withstand them. The remedies naturally follow the diseases, *ergo* those that apply to horses apply equally to mules. Having said this, it would be sheer presumption on my part, to lay down any detailed rules in the face of the numerous well-known veterinary works. As with all pack-animals, however, I place wounds and bruises first as the most common, necessitating the usual liniments for keeping off flies, and then run the gamut from colic to glanders, to all of which I think I am fully justified, from experience, in stating that the mule is liable in a lesser degree than the horse.

As an allotment of transport, soldiers, until they have become accustomed to them, find mules troublesome to load, less tractable than either camels or elephants; but, once they have become used to them, they recognise their undoubted superiority when carrying the lighter kinds of tents, hospital stores, kit-bags, entrenching tools, ammunition, field telegraphs, spare arms, or when drawing carts and machine-guns. Then, again, the smaller working unit admits of easy division; they go quicker, can carry two or three days' grain ration without inconvenience, keep up over any ground, and can be picketed close to tents at night without much fear of stampeding among the ropes.

It is to be hoped, more especially with regard to mules, that the present diversity in the pattern of field equipment will be reduced to one standard, and that the poles of all tents will be made so as to divide. If the mule were taken as the basis upon which to regulate every pack load, I feel confident that no great difficulty would be found in arriving at handy components to suit all army equipment. Mules can carry anything, but the loads must be

compact, regulated for an animal 13 hands 2 inches, which is the extreme size a pack-mule should be, as over that he becomes harder to load, and increased height generally means only increased length of leg without a corresponding increase in strength. The golden rule with mule loads is to see that the girths are always tightened as far as they will go, the saddle and gear in thorough order, that the load is evenly balanced, does not touch the animal's skin anywhere, and rides as high as possible. The position of the saddle, crupper, breast-strap, &c. is the same as on a horse, remembering that a mule seldom has high withers. The stable-treatment, watering, &c. is also much the same as that for horses, though in a modified form, moderate grooming being all that is necessary on service, but the more of this they get the better; and the fact that they are hardier than the more important animal is no reason why they should ever be neglected, or supervision relaxed. As I before stated, mules for transport purposes are grouped in threes, only one driver being allowed for every three animals. After loading up, therefore, the three mules are at once fastened to each other by their head-chains (hooked to the rear-hooks on alternate sides of the saddle of the mule in front), and handed over to the muleteer who marches off as directed. Over mountain-paths it sometimes, though rarely, becomes necessary to unhook the chains; but I have seen a group of three round a narrow-pathed corner on the side of a precipice as comfortably as on a high road.

Besides legitimate purposes, mules are most valuable for *tonga dâks* ("posting"), carrying orderlies with messages, wounded, water, and the variety of duties they are always put to on service. Once more I assert that mules are the most generally useful and satisfactory of all pack-animals.

NOTE.—Since the above was written I have had an opportunity (through the kindness of the officer commanding) of inspecting the mules and waggons in use with the commissariat and transport corps at Aldershot—those employed during the recent "flying-column" manœuvres. I append a few impressions, writing under all willingness to be corrected if wrong. I will not venture to offer an opinion upon the system adopted in England, but I think I may safely say that it is unsuited to the transport of an army in a sandy or mountainous country. No doubt it is not so intended; but as, unfortunately, most of our wars occur in such localities, it would, perhaps, be as well that the transport connected with an expeditionary force should be immediately capable of a certain

amount of ubiquity. It strikes one, however, that, as at present constituted, it is somewhat too cumbersome; for it should never be lost sight of that the first object of this unavoidable incumbrance to an army should be to reduce its own bulk to the lowest limit possible without impairing efficiency. As it stands, with its elaborated gear and number of attendants, it would almost require a transport for itself. The cost I have not attempted to consider. One thing (indeed, that which has induced me to add this note) could not fail to attract my special attention, viz. the size and conformation of the mules. They are remarkably fine American beasts, possessing nearly all the good points of horses, but they are scarcely the breed for *pack* purposes; and I do not think I am singular in considering that all transport mules should be suitable alike for pack and draught. These mules stand, I should say, at an average of fifteen hands, *i.e.* nearly six inches too high for easy loading; they have well-defined withers, and are given (so I am told) the same ration as a horse. Such large animals require this, but then their cost to buy and keep must be considerable. A smaller, sturdier built mule would probably do as much work (a lighter cart might be constructed for him without much, if any, loss of carrying capacity), and, if the conformation laid down at p. 586 was adhered to, be equally available for pack and draught. The teams at Aldershot are certainly very handsome, admirably turned out, "smart" to a degree; and I trust I may here be permitted the remark that a maximum amount of "smartness" is quite compatible with a minimum of "swagger." If report speaks truth, it was the confounding of the latter with the former that wrecked the late "Military Train." Such an error is evidently not likely to occur again.

(To be continued.)

Letters from a Midshipmite.

Alfred Stapleton-Smith, Esq., Midshipmite,
 To Mrs. Stapleton-Smith, Heron's Court, Devon.
 H.M.S. *Atalanta*,
 Off Valetta, Dec. 1st, 1885.

DEAR MATE,

In your last yarn you ask me to tell you the "salient points" of life in these latitudes. Fact is, the only "points" I know are those of the compass, which are soon told off. We had an awful casualty, though, the other day, as you will admit when you hear the heartrending details. It resulted in the total loss of several cocked-hats, and the complete destruction of many gorgeous uniforms. My best Sunday-go-to-Meeting toggery is an utter wreck—it would bring tears to the eyes of a crocodile to look at it! It was at a funeral, and we were crossing on a plank. Just as we reached the middle, pathos turned suddenly into bathos; the bridge gave way, and *the* body and everybody were involuntarily committed to the deep, where we all flopped and floundered like so many seals. Lord! if you could have seen the cocked hats of the ancients, which toppled off in the shock, cruising away, without (*sealed*) orders, to unknown seas! They stood not on the *order* of their going, but went at once. Shakespeare.

The only thing of any *interest* which this log contains is the fact of my confounded hardupness. I'm in very narrow circumstances, indeed, as you would say yourself if you saw the place where my hammock is slung! Now, if you were to send a fiver next mail (I merely throw this out as a suggestion, you know; I always like to give you the first chance), I could find a use for it. It's not exactly a case of *nix mangare*, as the beggars say on the steps yonder, but a fellow can't live on bread alone; he wants champagne and other necessities of life. Then a man in my position has so many claims on his purse; there's the honour of the gun-room to maintain, and all that sort of thing, you know. You don't *make enough allowance* for that, if you'll excuse the pun!

Prince A. B. C. was on board the other day, by invitation, but he was quite unnoticed by Us. We left him to the ward-room fossils, a horribly old-fashioned, far-and-away-behind-the-times lot. It was rather rough on the poor chap, perhaps, who, to give the devil his due, was not a pushing sort, and did not try to force himself on our acquaintance. But then, you see, as an advanced Rad, a man must be true to his principles which forbid him to encourage princelets. For my part, I shall always stick to the Grand Old Martyr through thick and thin. What fun it would be, to be sure, if he brings about a universal shindy, and gives a fellow a chance of being knocked into a cocked hat in the *best* sense of the term!

We officers of the gun-room literally hold our lives in our hand—and foot. One of this noble army of martyrs—if the navy can be called the army—we are armed, at any rate, and h'armed, too, as they say in the fo'castle—an insolent sub of marines went so far the other day, when I had the watch, as to call me a "babe in arms"! Of course, I treated the remark with *silent contempt*; in the navy it's the only way to quell cheek—I have practised it successfully on the Skipper, with whom I *never* condescend to bandy words. But hold hard! all my moorings are gone. Where has the craft drifted? I must take soundings. Oh—I was about to tell you of a shocking accident which happened to a messmate last week. One of the mids fell from the masts—or rather from what are called "shrouds"—on this account—and was smashed in a jiffy, poor fellow! It's *likely to happen to me any day*, so perhaps you had better send that "tenner" (to which, I believe, I have casually alluded) next mail, as it would come in handy for funeral expenses. If anyone says that we are buried like paupers, at Government expense, advise him to go and tell that to the marines! What can a miserable land-lubber know about Her Majesty's Navy?

As I was cruising about the Strada Reale the other day, I anchored] at an emporium for the sale of the flimsy rubbish for which this region is noted. I thought of you, *Madre mia*, for I know that that lace is to a woman what cream is to a cat; when, suddenly (I'm sure I can't account for it), a natural—or, perhaps, I should say, an *unnatural*—phenomenon occurred. Such a lot of your maternal precepts came bouncing all of a heap into my figurehead, that I cut the cable incontinently, and steamed of into safety. First came, "Think before you act, my son"; second, "Learn to resist temptation"; third, "Never buy what you do not need"; lastly, "It is more blessed to *give* than to receive."

I assure you I felt quite a virtuous glow when I thought of the blessedness that would be yours when you send me the "fiveer" and "tenner" to which incidental reference has been made.

Last week Skipper and self had a bit of a breeze, and since the event there have been rather strained relations between us. "Well, Mr. Smith, what is all this I hear, Sir? You are a d——d insubordinate young jackanapes." This was only the prelude to the engagement, a sort of preliminary rattle of small arms. Then came a double broadside, and it volleyed and thundered till all was blue, and only came to an end at last from want of ammunition. To all these polite amenities I only replied by an eloquent silence; but I regret to say that a good example is thrown away on him, it's only a waste of fine material in a man-of-war. Fact is, old Briny takes advantage of my forbearance, he *knows* I won't report him to the Admiral.

This is far and away the most scandalous hole I have yet been in. But don't be uneasy at any reports you hear, matrimonial or otherwise, as I assure you I'm not to be caught with chaff. We officers of the gun-room don't frisk and frivel like the ward-room antediluvians. They do it, poor devils! to pretend they're young—and their thatches all falling off, too. They hop about on the light fantastic till cockerow; which, by the way, is all night long here—you're not kept waiting till "incense-breathing morn," as the poet says. The Maltese cooks (like most of my fair friends) are never tired of the sound of their own voices. You see they're not dangerous, poor old souls! in their waning charms (not the cooks, but the fogies), and the women are not afraid to dance with them. Now with *Us* it's quite different, they *always* say they're engaged, thinking, no doubt, that discretion's the better part of valour. They seem to feel instinctively that we're not *marrying men*, and don't like the risk of losing their hearts. Well, I don't blame them, pretty dears! self-preservation's the first law of nature, and, after all, it saves us no end of fatigue.

Dec. 12th.—We gave a grand hop this afternoon, and the old ship was *decked* out like a professional beauty. No lady's maids could have worked harder than we did at the "get up" of a coquette. We smothered her in flowers, "roses and lilies and daffydown-dillies," as the poet says, and what with flags, bunting, and all the rest of her bravery, Solomon in all his glory would have been nowhere. When "awful beauty had put on all its arms," it was time to fetch over the other beauties. For once I was in luck's way. There's only one officer in command

of each boat, as I suppose you know; slightly in advance of mine was another in charge of a sub-lieutenant—my “superior,” save the mark!—when all at once I spied a stunning girl waiting on the sea steps. I steered right against the other boat, and knocked it out of time, for which act of gallantry I was rewarded by a burst of nautical eloquence to which I didn’t stay to listen, you may believe, but rushed my craft to the landing-stage, jumped ashore, made my best bow, and had the charmer and her chaperon on board in a jiffy. I helped the old lady carefully to a seat, but just as the young one was stepping daintily in, I gave the boat a violent lurch, which precipitated the bundle of charms right into my manly arms. She gave a scream, of course,—must musical, most melancholy,—and the exclamations and apologies which followed the catastrophe broke the ice, and obviated the necessity of an introduction which I knew there was no chance of getting, the jealousy of the seniors being a screaming scandal. You may imagine that I didn’t let the opportunity slip, oh no! You should have seen my tender solicitude, courteous attentions, chivalrous devotion. I sacrificed my fresh white-rose-scented handkerchief, and carefully wiped the salt water off her dress, which, I fear, was not improved by its impromptu shower-bath. After that we got on like a ship on fire. As soon as I had time to contemplate my fair capture leisurely, I noticed that she had hoisted the fashionable black flag under her lovely orbs. Now my tastes are highly artistic, and I don’t appreciate your bread-and-butter Misses, so this little detail stamped her charms with a cachet in my eyes. I afterwards heard she was only sixteen, but she was quite a woman of the world in her ways, and about as fast as they make them. As soon as I had stowed my cargo, I had to return to the mainland for another bale of goods, bads, and indifferents; the second I reckon are the Maltese of the male persuasion, and the latter the chaperons. When all the voyages were over at last, and the wearied mariner had returned to his home on the ocean wave, the dancing was in full swing. After a keen hunt I found my charmer on the hurricane deck, just consigned to her chaperon, who, I discovered, was her mother. The bars of a waltz struck up, and she was looking about in evident displeasure for her tardy knight, when I, watching my opportunity, dashed in to the rescue.

“May I have the pleasure?” said I in my best manner—the Grandisonian one—I keep several on hand. As she hesitated, the maternity shoved in an oar, and that clinched the business.

"Violet, my dear, you are engaged to Mrs So-and-so," naming the flag-lieutenant.

"Oh, that's cancelled," said the fair Vi with an airy laugh; "like time and tide, I wait for no man."

At this I whisked her off in a trice, for I happened to catch sight of Monsieur Tryptard struggling up the companion ladder; so I dodged into the thick of the crowd, and rushed her down the other side.

I now proposed to take her over the ship instead of dancing, which, under the circumstances, was too dangerous; and, as a woman is always full of curiosity, she consented. Well, to cut a long story short, I took her here and there, stuffed her full of marvels and travellers' tales, and at last landed her down in the armoury. After I had explained our pleasant little arrangements for battle, murder, and sudden death, with which she seemed much struck, I proceeded to subjects more personally interesting. We had just entered on a most promising flirtation, and I was in the act of committing—well—a—slight indiscretion, we will say, when the door burst open, and in blundered that confounded marine—the fellow who called me names, and with whom I am generally at daggers drawn. Tableau! It seems that he had been spoons on the girl since the beginning of the season, that she was engaged to him for the particular dance (nearly the last) then going on, and that he had been stalking his game all over the place. Krupps, torpedoes, electro-dynamo-batteries bristled all over him, and in his furious eyes I plainly read, "Pistols for two, and coffee for one." Well, I had my fun, and now I have to pay for it. *Vive la bagatelle!*

If your Bank Account should happen to be low, and you find it inconvenient to part with a "pony" (I believe the subject has been already lightly touched upon, if my memory does not fail) you might try Jack. What can an undergrad, and parson in embryo, want with so much dross? It's a positive snare to the young man. Tell him, from me, not to lose such a fine opportunity of "giving to the poor," and remind him that charity begins at home. In this way we should aid each other in our several professions, don't you see? and, for my part, I always like to hold out a helping hand to a brother. I'd spin him a yarn on the subject myself, but can't afford the stamp (which is tuppence-halfpenny), as I must save against a rainy day, which often sets in with great severity in these latitudes. To be continued in our next.

Believe me,

Your affectionately-impecunious Son,

I was just about to sign my initials, which would be writing myself down an—ahem!—a quadruped; and to have been, even inadvertently, guilty of such a flagrant untruth would have caused me the most poignant remorse to the end of my life. I must, therefore, waste my valuable time by signing in full,

ALFRED STAPLETON-SMITH.

P.S.—I'm sorry to hear that you don't approve of my language; but all I can say is, that if a sailor has no right to the use of naughty words, who has, I should like to know?

P.S.S.—In case Jack should be blind to the beauty of self-sacrifice, and refuse to stump up with the £30 or so (which has already been delicately hinted, perhaps, that I should be graciously pleased to accept), you will know what to do. The how and where is, after all, mere matter of detail, to which I am indifferent.

P.P.S.S.—Happy thought! Why not insure my life, which would prevent me from being smashed, and then funeral expenses would be saved! Besides, I hear that the offices pay a bonus. Send the bonus, and keep your own money for another time. There's sound political economy; you can't say that anything was wasted on my education! You can tell the doctors that I'm as sound as a bell (better say six bells). My heart gives me no uneasiness; in fact, everyone says there's no evidence to show that I have any; and my lungs would be entered A 1 double first. The rest of my internal economy next mail.

A. STAPLETON-SMITH.

From the same,

To John Stapleton-Smith, Esq., Paternoster College, Oxford.

H.M.S. *Atlanta*,

Valetta, Dec. 14th, 1885.

OLD CHAPPIE,

It's not often you're honoured with a specimen of my "graphiology" (isn't that the correct word, my Strasburg goose?) for all the ologies are a nuisance, and my fist is more accustomed to wield the sword than the pen. That doesn't sound quite original, but never mind—it looks well, and many great men have not been too particular about *meum* and *tuum*. Anyhow, make the most of this, for it may be the last. I've the greatest talent for getting into scrapes of any fellow you ever knew; in fact, it amounts to genius; and the last one bids fair to transport me to a better world, where, it's to be hoped, there are no *marines*, or other sea-serpents.

On the 12th we gave an At Home on board, and, before it was over, I got into two distinct and separate rows; and ever since have been very much at home, being confined to the ship for a week! The first high crime and misdemeanour was steering against a boat, by which accident I secured as passenger one of the jolliest girls of the season, as well as a slanging, which was nothing short of perfection, from the sub-lieutenant in charge of the insulted craft. Not content with his own oratory, he reported me, after the hop was over, to the powers that be; and although I cheerfully undertook to explain it all away, after the manner of my great exemplar the G.O.M. (translated into Gigantic Old Maniac by the ward-room scoffers!), my eloquence was nipped in the bud, and I was sentenced to keep the ship for seven days. This proves conclusively that it's opportunity that makes the man.

However, this high-handed tyranny secured me, at any rate, a week's lease of life, as I am about to explain.

The second was an affair of gallantry. I had devoted most of the afternoon to the fair capture of my tiller, and we had finally dropped anchor in the Armoury—a nice retired place, invaded by none but a solitary sentry on patrol, who kept at a discreet distance like a sensible fellow, although he was only a marine. A most promising flirtation was progressing favourably, and I was just about to seal my allégiance on her rosy lips, when in burst that pestilent marine, Curtis, who was born to be the greatest plague of my life—and I have as many as Pharaoh—and insisted, as usual, on making himself unpleasant. How was I to know that he was sweet on the girl, confound him! As soon as she caught sight of her adorer, Miss Vi proved equal to the occasion. Putting up her pretty little tan-suède-covered paws in pious horror, as if to ward off the chaste salute, she gave a suppressed shriek, which, 'pon my honour, was impromptu acting worthy of a professional.

Curtis stood and glowered; his rage was beyond all words.

The lady threw him a sweet, appealing look; that is to say, she "made eyes at him." Then he recovered his powers of speech, and broke out into apologies, stammering with fury all the while, for the "insult to a lady on board the *Atalanta*—disgrace to the ship," &c. &c.

"Oh, let the old ship take care of itself; I'm sure it looks 'fit,'" said his inamorata, by no means impressed with all this tall talk, and bursting into a peal of laughter. "Oh, come now, Mr. Curtis" (coaxingly), "you take it quite too tragically. I assure you I don't mind children; I have little brothers at home."

"May I inquire your age, Miss Vane?" said I, with dignified

irony; "as I should like to know how much you are my senior—as a mere matter of curiosity."

"No, you may not; it's rude to ask a lady her age. Besides, a woman is as old as she looks!"

"And a man as old as he feels," I retorted. "As that's an unknown quantity, I have the advantage of you, Miss Vane!"

But Curtis had already hooked her off, and the last words were hurled at her retreating basket-plaits.

That night, before I slept, the revengeful devil sent me a challenge! Well, no matter; it's all in the day's work; and a fellow who's afraid of a bullet has no right to don the Queen's uniform.

* * * * *

Dec. 15th.—To-day the preliminaries of the duel were settled. The seconds are Maltese, to keep soldier and sailor pals out of the scrape. Pistols. Ten paces. At San Antonio, behind a certain screen of prickly pear trees. Date, 20th inst., when I shall be my own man again, if that's not a mere figure of speech in the navy.

I shall leave this scribble open till after the event, with instructions to Zeccho, my second, in case I fall, to add a postscript and forward it to you. To the Mater it must be kept dark. Tell her it was an accident, which is common enough, Heaven knows, in our way of life, with the playthings we handle. . . . And, I say, old man, if you ever noticed any good point in me—can't say I have myself—make all you can of it, and—but there! I'm not going to snivel.

Dec. 16th.—Made my will to-day. Being a minor, it isn't exactly legal, I'm told, but I have made you my executor, and I'm sure you can be depended on to carry out my last wishes. The little sum left me by my godfather, to accumulate till I came of age, is to be paid over to the G. O. M. to form a fund to purchase cows for the three-acre business.* Then, when my obituary is published in the *Times*, the *vox populi* will be unanimous that, whatever his faults and follies, he was distinguished by his public spirit, and acted up to his political principles to the bitter end. All my portable property I leave to you, old man—make a good use of it. It includes my sword, which is warranted harmless.

Dec. 17th.—Tumbled out of my hammock this morning in first-class spirits. Having got all business off my mind yesterday, and

* Query.—What should I do if I had three acres and a cow? . . . Mem.—Make the acres into a tennis-court, and drive the graceful animal in a T-cart. This would have the merit of originality, at any rate.

done my little best to settle my worldly affairs; I have nothing to do now but enjoy myself as well as circumstances will permit, for my possibly few remaining days on earth—except the inaccuracy, I meant to say, water. To this end I played some tricks on one or two of my shipmates, as I should regret to go over to the majority in anyone's debt, and notably on the sub. who reported me, and, although his inner consciousness will reveal the deed as *unbecomingly*, he can't prove it; thank the gods! Yes, if it comes to the worst, I shall live at least in the memory of my shipmates for some little time, I flatter myself.

After mess, feeling rather tired with the pleasant excitement of the day, I stole out of the gun-room, and went up on deck, where I crept, unnoticed in the darkness, into one of the boats alongside. Lying down at full length in the bottom, I gave myself up to reverie, romance, and cigarettes. I thought with regret of the Lost Kiss, which no poet, as yet, has rendered immortal, though it's a far more heartrending subject than "The Lost Chord," as I haven't the faintest hope of finding it again in Heaven.

The night and the scene were alike so perfect that they might have fired even a "mute inglorious Milton," and made him break out incontinently into verse. A deep slumberous darkness, warm and balmy, charged with sweet sounds and scents, brooded over land and water. The soft plash of the waves against the vessel was like a cradle-song, and the strains of a band, mellowed by distance, floated over the placid sea. Lights, resembling glowworms, gleamed from the forts of the various rocky islets, and the great naval hospital at Bighi. On the mainland of Valetta and Sliema a grand Maltese festa was in progress. Festoons of small lamps, in every colour, suspended in garlands from the façades of the buildings, gleamed and flashed like jewels on the darkness of the night. The thought of the Elegy suggested the composition of an epitaph in verse to adorn my tombstone. Wrestling with the difficulties of versification, I found myself unable to provide a rhyme for "late," except "late," "rate," and "slate"; and no wonder either, as I hear enough of them all, and the former brings the latter as the thunder follows the lightning! "Mate"? No, confound it! that's shippy and shoppy. After all, this casting about for rhyme is unworthy of a great intellect, quite childish, in fact. The finest poems are in blank verse, so here goes. H'm; if my ideas don't come a little quicker, mine will be blank verse indeed! Feeling utterly exhausted by my literary efforts, I had just raised myself to get in search of inspiration in a liquid form, when I was arrested by the sound of voices and the tramp of two pairs of boots up and down

the deck. The speakers were my affectionate friends, Curtis and the *Spliff*, whose boat I ran against, Robins, by name.

"Now," thought I, "I shall hear something to my advantage, and no mistake."

Sure enough, it soon came. I was not disappointed.

"That imp of Satan has been at his tricks again," says friend Robins, just above my head.

"So I hear," remarks phony Curtis. "There's no catching the slippery little devil. You might as well try to collar an eel."

"Ha, ha," I chuckled to myself, "it's only a cook can do that, my boy."

The boots and the voices receded, by which, no doubt, I lost some other flattering remarks. Then they cruised back again, and I caught the words:

"Don't mean to hurt him, I suppose?—infernal row."

"Of course not, but mean to frighten the little brute within an inch of his life, and crush some of the confounded cheek out of him."

"Rather tough job—give the devil his due—pluck enough for a dozen powder-monkeys."

Sounds recede. Back tramp the boots again, and the owners cast anchor a little to leeward, leaning over the side as they continue the interesting discourse.

"Can't say he seems very down in the mouth; rather cocky, to my thinking."

"Booh!" cries Curtis, irritably, "that's all bounce. Bounce, my dear fellow, to cover the awful funk he's in."

"May be," says Robins, doubtfully. "But, I say, old man, suppose he pots you? The imp's a crack shot, you know."

"Oh, that's squared with—"

I could not catch the last words, but I guessed all about it.

"Bene," replies Robins, airing his lingo. A violent epidemic had lately broken out in the ship, supposed to be due to the presence in harbour of an Italian corvette, and poor Robins had taken it badly. "*Buona notte; caro mio*; going to turn in, got the morning watch."

"Dash my buttons, here's a go!" thinks I, rolling in the bottom of the boat, almost in convulsions. "Little brute, am I? Imp of Satan, am I? Powder-monkey, am I? Very good, gentlemen; much obliged, I'm sure. Sorry to be in your debt for a moment, Mr. Curtis, but you shall be repaid with compound interest, never fear, Sir. *Qui vivra, perra*, as a froggy Frenchy puts it."

As you may believe, old Jack, I postponed my epitaph to a more convenient season, and turned the whole force of my powerful intellect to circumvent the enemy.

Dec. 19th.—Yesterday sent for Zeccho. We had a high old time of it. When he received my instructions I really feared for his reason, and had to administer promptly a B. and S.

My sharp ears caught sounds of "Dutch courage," "hysteria," "bounce," &c., in Curtis's manly tones, at what he considered a discreet distance.

Dec. 20th.—Six bells.

This is the day of the great event!

* * * *

Dec. 21st.—"May I go on shore, Sir, please?" said I to the first lieutenant, early in the afternoon yesterday.

"Want to get into mischief again, I suppose, Mr. Smith? Better stay where you are."

"Oh, do let me go, Sir," I pleaded, with touching humility. "I have a most pressing engagement, indeed."

"Really!" he cried, wheeling round suddenly, and glazing at me so suspiciously that I was afraid I had overdone it. I put on my most innocent and artless expression.

After glowering for a moment or so, which, I noticed, was very unbecoming to his peculiar style of beauty, he said sharply:

"Where?"

"Where, Sir?" I faltered, not quite understanding the question, which was fired at me suddenly, as if out of a catapult.

"Yes, Sir, *where*. W—h—e—r—e. Don't you understand the Queen's English, Sir?" raising his voice, and running up the red flag, the usual storm-signals.

"Beg pardon, Sir," touching my cap with mingled politeness and deference. "A musical 'At Home.' Great friend of my mother's—made a particular point of my going, Sir."

"Don't believe there is one," he said rudely, pulling out his tablets. H'm, yes. '20th, Lady A——'s.' Is that it?"

"Yes, Sir."

"So Lady A—— is a friend of yours, is she?" in a mollified tone.

"Oh, very intimate indeed," I assured him earnestly, perceiving my advantage; "quite a second mother."

(I regret to say, Jack, that our first lieutenant is a CAD, writ large. Every ship has its skeleton.)

"But it's not time to go yet," continued my 'superior,' affably. "I'm due there myself this afternoon."

"Oh, but I have to pay a visit out of town, Sir, first."

"Well, well, be off then. Don't let me hear of any more of your pranks, that's all."

I vanished instantaneously, and, on landing, met Zeccho by previous appointment. After completing our arrangements for the sanguinary encounter, we jumped into a four-wheeler, and started for San Antonio. Although we were in very good time, we found Curtis already on the ground, attended by his Maltese second, and my dear friend Robins, who, I suppose, had come out to see the fun. Curtis's second loaded the revolver. Slowly and solemnly, and with much ostentation, pushing up his coat-sleeve, and holding the ball gingerly between his finger and thumb before dropping it in, after the manner of a conjuror before his audience.

They all watched me narrowly during this theatrical performance. I folded my arms in a majestic, Napoleonesque attitude, and assumed a serene and tranquil expression. At least this was how I appeared to myself in my mind's eye.

Zeccho turned slightly aside as he loaded my weapon, and again I was closely observed, but apparently noticed nothing unusual.

Then the ground was measured off, and we took our places.

"When my handkerchief drops, gentlemen, you will fire simultaneously," said Robins, who had been appointed umpire, slowly and solemnly.

In profound silence the white rag fell, instantaneously followed by a sharp report.

Curtis had fired in the air, as I expected he would, but I let fly full in his face. With one hurried glance, I saw a dark red stream gush forth, and trickle down his always extremely pale cheek. He put up his handkerchief to staunch the effusion, and as Zeccho and self skedaddled, we heard agitated voices questioning the wounded hero in horrified accents. In the excitement of the tragic scene we beat a retreat unnoticed.

* * * * *

We made our "Jo" gallop his quad all the way into Valetta, partly by bribery, but still more by force of arms, *i.e.* prodding him in the back with the butt of the revolver. By this means I was just in time to put in an appearance at Lady A.'s.

"Why, how late you are, my dear," she said, in her grandmotherly way; "what has kept you?"

"Duty," I replied, blushing. "I assure you, Lady A., this is the first day I have been able to leave the ship for a week!"

"Poor boy!" said the old lady with tender pity; "you must be terribly overworked. I shall really remonstrate with Captain B."

Jolly for me if she does! What an edifying biography mine would be if compiled by the Skipper!

* * * * *

When I got back to the ship the shattered *Mermaid* had not returned, and I did not see him that night. The next day I happened to hear part of a conversation in which I

"Good Heavens! Mr. Curtis," 'twas the voice of the Skipper—"what have you been doing to your face?"

"An accident, Sir—in a chemical experiment."

"Well, don't experiment on your own face next time, that's my advice to you!"

"No, Sir," said the victim of science, meekly.

Oh, ye whales and little fishes! what an object he was! I nearly fell backwards at first sight of him! A. P. B. now; and no mistake; he ought to go to America, and exhibit himself with the others.

From the brilliant results he must have done exactly what I had counted upon, viz. flown to the Club, and tried to wash off the stain with soap—which set the colour!

A gorgeous ruby patch glowed on one ivory cheek, like a full-blown peony, with little streamlets descending to the chin, while a vivid smudge adorned the bridge of an always obtrusive nose!

A week after the tragedy.

My brave challenger has won the *soubriquet* of "Neat but not Gaudy." He goes about like a bear with a sore head, in a state of chronic sulks, and won't speak to anyone, not even to answer the many kind inquiries of "How is your poor face?" I shouldn't wonder if the old *Atalanta* proves too small to hold us both.

Well, this is a long yarn, you'll say, so I'll wind up. Anyhow, all's well that ends well, and you won't have to go into mourning just yet, old man, for

Yours fraternally,

A. STAPLETON-SMITH.

P.S.—Right I was! Curtis has got leave to go home "on urgent private affairs!" I must try to console the fair Violet, poor thing! She has lost a possible hub, and in these days they are almost as scarce as blue roses, and will soon be an extinct race.

Analysis of Sir Frederick Fitzwygram's "Return of Crime in the Army, 1884."

THE following analysis of Sir F. Fitzwygram's Return might never have seen the light but for two articles in the *Times* of the 8th and 9th of last January, which suggested, by dark hints and sidelong insinuations, that crime in the army was largely due to the officers. One might as justly attribute civil crime to the police, or epidemics to the doctors. But life is too short to pause to refute statements that cannot be proved. If this statement can be so, let the *Times* prove it. It will then be time to discuss it.

In a mass of figures, like the Return in hand, errors of some kind are sure to creep in, and it is the first duty of a statistician to assure himself of the accuracy of his data before venturing to draw conclusions from them. This the *Times* statistician has omitted to do. Engrossed in bringing charges he could not prove, he failed to observe two errors at the bottom of the very first page of the return, which are patent to any careful eye. At the bottom of p. 2 (the first of the figures) the per-centage of the 899 minor courts-martial of the cavalry is given as 6.8. This would give the average strength of the cavalry as 13,220 men. The per-centage of the minor punishments of the cavalry is given, in the same place, as 8.6, which leads to a strength of 14,782 men, while the per-centage of deserters, 4.1, leads to a strength of 14,902 men. Two, at least, therefore, of these three per-centages *must* be wrong. On referring to the General Annual Returns for 1884, we find the average strength of the cavalry to have been 15,607; and, subtracting from this the 692 officers, we find the non-commissioned officers and men to have numbered 14,915. The per-centage of the deserters, consequently, is correct. When palpable errors on the very first page of the Return failed to catch the eye of the *Times* statistician, it would, perhaps, be too much to expect him to have waded through the artillery and infantry figures. And yet they are far from infallible. To take an artillery instance. Corresponding calculations show the strength of the dépôt, Cinque Ports Division, R.A., in 1884, to have been 154, 66, and 163 men. Similarly, there are hopeless discrepancies between the general courts-martial and deserters, on the one hand, and, on the other,

the minor courts-martial and punishments of the 1st Border Regiment and the 2nd Durham Light Infantry; while the deserters of the 1st Royal Highlanders, the 1st Gordon Highlanders, and the 2nd Worcestershires cannot be correct.

Are these, and such errors, of any moment? They are of the greatest moment. First, it is upon these erroneous per-centages that the *Times* presumes to preach, to admonish, to denounce. Secondly, it is impossible to make full use of the Return unless either the per-centages are scrupulously accurate or the average strength of each corps is given. Suppose, for instance, we wish to compare the crime in the Mediterranean with that in the West Indies. As the Return stands, the average strength of each battalion has to be calculated from the per-centages, and these strengths added together, in order to get the total strength in the two localities—a very serious labour. Were the average strengths given, eight-tenths of this labour, and proportional liability to error, would be got rid of. We should only have to add the strengths, and find the per-centage of the total number of crimes. Not only should the average strength of each corps be given, but when a regiment, like the 1st Yorkshire, has been in several stations, the number of crimes in each station should be shown separately. This regiment, for example, had 82 courts-martial; but how many took place in Nova Scotia, how many in Malta, how many in Egypt? Until such facts are known the most interesting investigation connected with crime in the army is impossible—its geographical distribution.

Before leaving this branch of the inquiry, we may say that, although the per-centages in the Return are, unfortunately, unreliable, the numbers of crimes, &c. are quite accurate.

In consequence of the unreliability of the per-centages, they have not been made use of in the following analysis. The strengths have been calculated as follows: the strengths of depôts, Tables I. to V. inclusive, are taken from the Army Estimates, 1884-5, p. 16. The numbers of all arms in India are taken from the same Estimates, p. 9. Both sets of figures are slightly in error, as they give the absolute strength on one fixed date, instead of the average of the year. But they are probably more accurate than figures derived from the per-centages. The separation of the field-batteries from the garrison artillery involved much trouble. The artillery in India was taken from the Army Estimates, p. 9, and subtracted from the total average strength. The depôts were taken from the Army Estimates, pp. 11 and 16, and, being subtracted from the above remainder, left the combined strength of the field and gar-

rison artillery "elsewhere." This last sum did not quite agree with the figures in the Army Estimates, p. 11; but it was cut in the ratio of the figures given there. The result may not be absolutely correct, but it cannot be materially wrong. The numbers, in all cases, shown as serving "elsewhere," were obtained by subtracting the sum of the recruits at the dépôt and the soldiers in India from the average strength given on p. 1 of the General Annual Returns of the Army, 1884.

"Figures will prove anything," we are told by wiseacres. No doubt they will, if they are properly misused, but not otherwise. In order to give a good example of their misuse, the desertion in India is shown separately. Desertion in India (owing to the men being *unable* to desert) is so small that it may be practically ignored in any comparison of the relative desertion of the three arms. But the figures of desertion, although too small to produce any sensible error in an estimate of *comparative* desertion, may lead to serious errors in an estimate of *absolute* desertion. For example, the average strength of the infantry in 1884 (dépôts excluded) was 98,875 non-commissioned officers and men, part of whom were in India and part "elsewhere." Of this number 1,552 deserted, or 1·5 per cent. Now, this number, 1·5, is a pure fiction. It is a rate at which neither the soldiers "elsewhere" nor the soldiers in India deserted. The infantry in India deserted at the rate of 0·1 per cent.; the infantry "elsewhere" deserted at the rate of 2·5 per cent. We have taken the mean of two heterogeneous elements—the infantry in India that cannot desert, and the infantry "elsewhere" that can desert—and the natural result is a fiction.

To the *Times* statistician the principle that forbids the intermingling of heterogeneous elements is foolishness. He ignores it. For instance, he is disappointed with the Guards, and pours out a vial of wrath upon one of their battalions. But no legitimate conclusion can be drawn from the figures of the Guards, for they have inextricably mingled the crime of their soldiers and the crime of their recruits, and the figures given in their returns probably represent the crime of neither. They are higher than the crime of the soldiers, and lower than the crime of the recruits. A recruit is a man learning to be a soldier; he is to a soldier what an apprentice is to a craftsman, a law student to a barrister. Recruits and soldiers, then, are so far heterogeneous classes that to mingle together their crime can only lead to error. The Guards are, consequently, not included in the analysis.

The Household Brigade are also excluded, in obedience to the

principle that in statistics we must deal with large numbers. The smaller the numbers, the less reliable the conclusions drawn from them. The *Times*, of course, disregards this as well as every other recognised rule, and gravely congratulates the brigade on its good conduct. Even did the brigade number thousands in its ranks, no useful result could be gained by comparing its crime with that of any part of the rest of the army; for, as everyone knows, the men of the brigade are drawn from very different classes from the rest of the army. For similar reasons the Royal Engineers are not included in the analysis.

"Desertion and crime," says the *Times* of the 8th January, in its loftiest and most menacing manner, "generally are closely allied with discontent in the ranks, and discontent in the ranks is not unfrequently associated with misgovernment, directly or indirectly, by the commanding officer." No proof is given, or even attempted, of the three assertions which appear to form the staple of this lumbering sentence. The shortest way of dealing with them, consequently, is simply to deny them. We deny, first, that misgovernment by the commanding officer is the cause, "not unfrequently," of discontent in the ranks. In the vast majority of cases, discontent in the ranks is produced by local or external causes, such as a bad climate, the want of the means of sufficient recreation, being kept too long on foreign service, &c.—causes, in fact, which entitle the commanding officer to feel as discontented as anybody else. We deny, secondly, that crime is closely allied with discontent. The greatest amount of crime generally occurs in the drunkenest and merriest stations. Thirdly, we deny that desertion and crime go hand-in-hand, as the *Times* implies. On the contrary, it appears that, in general, the greater the desertion the less the crime (and *vice versa*), both among recruits and soldiers. For instance, it will be seen from D. and F., Table VII., that the cavalry recruits have the most courts-martial and the least desertion. The garrison artillery recruits have the least courts-martial and the greatest desertion. Again, from D. and E., Table VIII., it appears that cavalry soldiers have less courts-martial than the field artillery, but a much higher rate of desertion. Similarly, A. and B., Table IX., show that garrison artillery gunners desert less and have more courts-martial than the infantry. Such, at least, was the case in the year 1884. If the returns of succeeding years supply similar results, we shall probably find an explanation in the fact that, by desertion, a regiment generally gets rid of its worst characters.

shown that the *Times* statistician has calmly ignored

the most important principles of statistics. He has made straight for the conclusions he chose to draw, in defiance of the rules of probability. But he transcends himself when he sits in judgment upon evil-doers, and pronounces sentence upon those who "not unfrequently" create the crime that disorders their regiments. What is to be said of the artillery officer who had 25·2 per cent. of courts-martial, and 894·8 per cent. of minor punishments, at Barbadoes? What are we to think of the infantry colonel who had 20·4 per cent. of courts-martial, 641 per cent. of minor punishments, and 19·8 per cent. of desertion, at Glasgow and Portsmouth? The sooner the law of selection is put in force to abridge the careers of these abandoned characters the better. In reply to those disposed to adopt the language used by the *Times* critic, we have only to say that it requires very strong evidence indeed (and the *Times* produces none) to prove that men wilfully act diametrically contrary to their dearest interests. Commanding officers have the strongest motive for diminishing crime in their battalions, or stamping it out altogether, if possible; for their hope of future employment depends largely upon their success as regimental commanders. Upon what, then, does the amount of crime in a battalion chiefly depend? Upon local and geographical circumstances chiefly, which are utterly beyond the control of the commander. This fact, although well-known to all practical officers, and dimly visible in the returns to hand, cannot be directly proved until we have a series of such returns for a number of successive years, giving the average annual strength instead of per-centages, and giving separately the crimes committed in the various stations occupied by regiments that have moved. To talk about a regiment in Cyprus being a "better regiment" than another in Barbadoes is not only to talk nonsense, but to talk misleading nonsense. Because Regiment A at Mauritius has more sickness than Regiment B at York, can we legitimately conclude that the latter have better constitutions—are physically better—than the former? By no means; for were the two regiments to exchange stations, Regiment B might, for aught we know, suffer far more from the climate of Mauritius than Regiment A suffered. Let Regiment X at Cyprus have courts-martial at the rate of n per cent. per annum, and Regiment Y at Barbadoes courts-martial at the rate of $2n$ per cent. Are we justified in saying that X is twice as good a regiment, morally, as Y? Most certainly not; for if the regiments exchanged stations, X might have, in the absence of knowledge to the contrary, a rate of $3n$ courts-martial at Barbadoes, and Y a rate of only $\frac{1}{2}n$ courts-martial at Cyprus. We can form

no safe judgment in such cases until we are accurately acquainted with the nature and intensity of the local inducements to crime; and these elements are at present little known, and must remain so, until fuller statistics are available. In order to compare the *moral* of Regiments X and Y, their crimes must be compared at some common station—say Aldershot. The circumstances of the two regiments are then the same, and if the time selected be long enough—two or three years, not a week or a fortnight—the result will be approximately true. If it be desirable to approach nearer to the truth, we should have to compare their crime at several common stations. Again, if we wish to gain an idea of the facilities offered to disorder by any two stations, the amount of crime committed by the *same* regiment or regiments in the two stations must be compared. If a number of regiments commit twice as much crime in Barbadoes as in Dublin, we may say that the inducements to disorder are twice as strong in Barbadoes as in Dublin, approximately. If this held good in the case of a score of regiments, we might feel sure we were very near the truth.

What deductions can legitimately be drawn from Tables VII., VIII., and IX., and what is their relative value?

The value of Table VII. is far inferior to that of Tables VIII. and IX., because the numbers considered are far smaller, and the crime of recruits is probably irregular and fitful.

The crime of the cavalry and field artillery is shown separately from that of the infantry and garrison artillery, because the latter serve abroad together in places like Aden, Mauritius, Jamaica, &c., where the former are never seen. For reasons already explained, therefore, the crime of the cavalry and field artillery cannot be compared with that of the infantry and garrison artillery.

The value of Tables VIII. and IX. is considerable for the year 1884; but we can do little with the figures, owing to the absence of similar returns for preceding and succeeding years. We cannot say such an arm is better, or worse, generally, than such another arm; for if we possessed the returns of preceding and succeeding years, the whole order of things might be found to be reversed. We cannot even say that one arm was better or worse than another in 1884; for the cavalry and field artillery change places in D. and E. (by far the most important divisions) of Table VIII., and the infantry and garrison artillery change places in A. and B., Table IX.

We trust we shall annually receive such a return as Sir F. Fitzwygram's, emended as we have suggested. We shall then, in the course of a few years, be in a position to form a just judgment.

upon the absolute and relative amount of crime in the army, and to point out with precision its geographical distribution.

TABLE I.

Royal Horse Artillery, 1884.

2 depôts	483 .			
10 batteries in India	1,856			
14 „ elsewhere	1,839			
Riding establishment	171	2,010	3,666 .	

Total . . 4,099 N.C.O.'s and men.

	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Depôts	27	6.2	404	98.8	26	6.
Batteries in India					2	.1
„ elsewhere	191	5.2	2,605	71.	39	1.9
Riding establishment						
Total	218		3,009		67	

TABLE II.

Cavalry, 1884.

12 depôts	1,273			
9 regiments in India	4,182			
19 „ elsewhere	9,460	13,642		

Total average strength . 14,915 N.C.O.'s and men.

	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Depôts	157	12.3	1,140	89.5	112	8.7
Regiments in India	745	5.4	11,573	84.8	2	.04
„ elsewhere					497	5.2
Total	902		12,713		611	

TABLE III.

Field Batteries, 1884.

4 depôts	1,542			
40 batteries in India	6,513			
36 „ elsewhere	4,854			
Remount establishment	83	4,987	11,450	

Total . . 12,992 N.C.O.'s and men.

	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Depôts	203	13.1	2,095	135.8	165	10.7
Batteries in India					8	.04
„ elsewhere	871	7.6	12,570	109.8	172	3.4
Remount establishment						
Total	1,074		14,665		340	

TABLE IV.

Garrison Artillery, 1884.

11 depôts	1,764	} 8,694	} 11,659
27 batteries in India	2,975		
69 „ elsewhere	7,151		
Coast Brigade, District Staff, and Shoeburyness Detachment	1,538		
Total	13,428	N.C.O.'s and men.	

	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Depôts	194	11	2,501	141.7	199	11.2
Batteries in India	680	7.5	11,654	100	6	.3
„ elsewhere						
Coast Brigade, District Staff, Shoeburyness					119	1.3
Total	1,074		14,155		324	

TABLE V.

Infantry, 1884.

69 depôts	12,490	} 98,875
50 battalions in India	40,400	
91 „ elsewhere	58,475	

Total average strength . 111,805 N.C.O.'s and men.

	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Depôts	1,383	11.1	26,187	210.7	1,213	9.7
Battalions in India	7,070	7.1	160,855	162.7	66	.1
„ elsewhere					1,486	2.5
Total	8,453		187,142		2,765	

TABLE VI.

Crime in the Army, 1884 ; by Seniority of Arms.

RECRUITS.

Corps.	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.	Per cent.
Royal Horse Artillery -	27	6.2	404	93.3	26	6.
Cavalry -	157	12.3	1,140	89.5	112	8.7
Field Batteries -	203	13.1	2,095	135.8	165	10.7
Garrison Artillery -	194	11.	2,501	141.7	199	11.2
Infantry -	1,383	11.1	26,187	210.7	1,213	9.7

TABLE VI.

Corps.	Courts-Martial.	Per cent.	Minor Punishments.	Per cent.	Deserters.			
					Home and Colonies.	Per cent.	India.	Per cent.
Royal Horse Artillery	191	5.2	2,605	71	89	1.9	2	.1
Cavalry	748	15.4	11,578	114.8	497	5.2	2	.04
Field Batteries	871	7.6	12,570	109.8	172	3.4	8	.04
Garrison Artillery	880	7.5	11,654	100	119	1.3	6	.3
Infantry	7,070	7.1	160,955	162.7	1,486	2.5	66	.1

TABLE VII.

Crime of Recruits, 1884.

A. COURTS-MARTIAL.		D. COURTS-MARTIAL.	
	Per cent.		Per cent.
Royal Horse Artillery	6.2	Garrison Artillery	11
Garrison Artillery	11	Infantry	11.1
Infantry	11.1	Whole Field Artillery (Horse and Field combined)	11.6
Cavalry	12.8	Cavalry	12.8
Field Batteries	13.1		
B. MINOR PUNISHMENTS.		E. MINOR PUNISHMENTS.	
	Per cent.		Per cent.
Cavalry	89.5	Cavalry	89.5
Royal Horse Artillery	93.8	Whole Field Artillery	126.5
Field Batteries	135.8	Garrison Artillery	141.7
Garrison Artillery	141.7	Infantry	210.7
Infantry	210.7		
C. DESERTERS.		F. DESERTERS.	
	Per cent.		Per cent.
Royal Horse Artillery	8	Cavalry	8.7
Cavalry	8.7	Whole Field Artillery	9.6
Infantry	9.7	Infantry	9.7
Field Batteries	10.7	Garrison Artillery	11.2
Garrison Artillery	11.2		

TABLE VIII.

Crime of Soldiers, 1884.

A. COURTS-MARTIAL.		C. DESERTERS.	
	Per cent.		Per cent.
Royal Horse Artillery	5.2	Royal Horse Artillery	1.9
Cavalry	5.4	Field Batteries	3.4
Field Batteries	7.6	Cavalry	5.2
B. MINOR PUNISHMENTS.		D. MINOR COURTS-MARTIAL PUNISHMENTS.	
	Per cent.		Per cent.
Royal Horse Artillery	71	Cavalry	5.4
Cavalry	84.8	Whole Field Artillery (Horse and Field combined)	7
Field Batteries	109.8		100

E.

DESERPTION,

	Per cent.
Whole Field Artillery (Horse and Field combined)	8
Cavalry	5.2

TABLE IX.

Crime of Soldiers, 1884.

A.		B.		
MINOR PUNISHMENTS.		DESERPTIONS.		
Per cent.	Per cent.	Per cent.	Per cent.	
Garrison Artillery	100	1.3	Infantry	7.1
Infantry	162.7	2.5	Garrison Artillery	7.5

That Confounded Beard!

OR, "A TALE WITH A MORAL."

By GUY C. ROTHERY.

CHARLES LEVER, in his *Confessions of Harry Lorrequer*, tells us an amusing tale about Othello's appearance on parade, and of the effect the Blackamoor had upon the commanding officer and the regiment in general. Harry Lorrequer, it will be remembered, had played the part of the amorous and jealous Moor on an amateur stage on the previous night, and, after his arduous labours, had sacrificed rather too liberally to Bacchus; the consequence was, the next morning he woke up late, heard the bugle-call for parade, hastily got up, and, to his great disgust, found that the looking-glass and basin-stand had not been brought back from the green-room. There was nothing to be done but to tumble into his uniform, buckle on his sword, and dash down to parade. Of course he had not washed, but this did not disturb him much, as he was totally oblivious of the previous night's adventures. He was late, and on appearing on parade his brother officers and the men burst into an uncontrollable roar of laughter at the singular appearance he presented. The Colonel was furious, and sent Harry Lorrequer packing off to quarters under a threat of court-martial; it was only on entering his rooms, where the looking-glass had been replaced by the tardy man-servant, that the hero perceived his black face and at length discovered what all the hilarity and fury was about. Of course he got out of the scrape neatly enough, all Charles Lever's *protégés* do so. Now, the original of this tale, I am inclined to believe, runs rather differently; the hero was Captain X——, and, unfortunately for himself, the scrape terminated by no means so well as that of Harry Lorrequer. The scene of action, too, ought to be laid at the Cape instead of Cork, under a blazing tropical sky and on parched earth instead of the delightful "Emerald Isle." However, when all is said, it is really very difficult to say whether Harry Lorrequer's adventure, as

narrated by Charles Lever, owes its birth to Captain X—'s misadventure, or whether they have nothing whatever to do with each other, being parallel events without difference. So much by way of preface. And now for my simple, verbose, and eminently sad story.

The hero, the scion of an old warrior and Catholic race, and who is still "in the land of the living," was always remarkable for an unquenchable genius for getting into the most startling scrapes, and for getting out of them satisfactorily. But a pitcher may go to the well once too often. And so Captain X— found to his cost. *Mais, allons! to our muttons!*

Captain X—'s regiment—I, of course, cannot give his name in full, or regiment, for obvious reasons; the Captain is still "late and hearty," and if I committed an indiscretion the consequences might be terrible to myself—I was saying, the Captain's regiment was stationed at the Cape of Good Hope at the time of Sir Harry Smith's command. The regiment rejoiced in the possession of a colonel with a "character." He delighted to be looked upon as the "father" of his regiment, joined in the sports and pastimes, loved to be confided in by his officers, and so on, but he was a strict disciplinarian. The set of a cross-belt in the ranks, a button with verdigris on it, or a loosened stock, acted upon him as a red rag acts upon an infuriated bull. Private, sergeant, and even the adjutant were abused in a terrible manner; "everybody were lazy dogs," "the service was going to the devil," with other remarks equally original and elegant. Then followed spells of punishment-drill, rebukes, and orderly-room remonstrances. Still, *de son caractère*, he was really a good fellow, with this serious drawback—he possessed an overbearing temper, bordering on ferocity, which it seemed impossible for him to control. We need hardly say that it was the Colonel's hard fate, like all good things in this world, to be sometimes hated and always dreaded. But he was above all silly prejudices, and not to be easily balked of his good intentions; so he loved all his neighbours in spite of themselves, and punished them, whenever they deserved it, without much mercy, albeit a little regret afterwards.

It is a strange illustration of the crookedness of our unregenerated natures that the real *mirabile sight* will generally choose the most exemplary and unapproachable characters for playing off his practical jokes upon. X— was no exception to this rule. On several occasions he had managed to "score off" his venerable chief, who, naturally enough, resented such marked attentions. The regiment, being on Colonial service, was allowed to grow

a beard—that is, the officers were permitted to do so; and several of these gentlemen rejoiced in remarkably fine specimens in the way of moustache and whiskers. X——'s beard was especially luxuriant. It was (1stly) coal black, (2ndly) covered nearly every inch of his face below the eyes, and (3rdly) terminated in two tremendous spikes, which, on windy days, would stream over the gallant Captain's shoulders and fly out like two tattered distress signals, or the ends of a British (rural) scarecrow's comforter. (N.B.—Urban scarecrows do not possess comforters.)

The Colonel watched this minute contempt of the "rules and regulations" with an evil eye. One fine day, being more than usually offended by the eccentricity displayed by his officers in the matter of beards, whiskers, and moustachios, he ordered his lackless adjutant to request his "comrades in arms" to reduce their beards to respectable proportions. Of course there was much grumbling, but the scissors were called into use, with, undoubtedly, pleasing results. X——, however, remained obdurate; his beard and whiskers had cost much time and trouble to get into proper trim, and it was not fair that a tyrannical colonel should deprive him of his silky facial appendages. He remained obdurate, we say. The Adjutant spoke to him personally. No effect. Still the streaming signals of distress, "d——d weather-cooks," as the irate chief turned them, graced the physiognomy of the contumacious captain. This was getting unendurable to the good genius of the regiment; he fretted and fumed, and at last, having used up his available stock of patience, he, at mess, remarked on the bad taste displayed by some men in allowing personal peculiarities to become too marked, and, waxing more pointed, turned round to X—— and said: "Do you not think, Sir, that a few inches off your beard would be a great improvement?" It was X——'s turn to be wrath; he left the mess-room as soon as he decently could, in a huff, determined to be revenged.

There was early parade every morning at the Cape, companies being formed by the non-commissioned officers, under the eye of the Adjutant, when the Colonel and company officers made their appearance on "officers fall-in" being sounded by the bugle. On the particular morning after X——'s public rebuke from the chief, the offended Captain was late on parade. When he arrived in the barrack-yard he found the men drawn up, the officers at their respective posts, and the Colonel mounted, with the Adjutant by his side. As he ran forward, the regiment being in line formation, his back was, of course, turned towards the Colonel, but his face visible to the whole regiment. As he approached, the line

suddenly wavered, shakos and muskets got out of the perpendicular, pomposes shaking from side to side; the men were contorted and seemed to be suffering from the colic. The malady was infectious (or contagious, whichever it is). The chief glared in speechless rage; the whole regiment was on the broad grin, and the officers doing their best to conceal their laughter! As for the Irish Major, he was bent double over his holsters, his face purple with suppressed mirth. The Colonel, with flashing eyes, turned on the astonished Adjutant, demanding "What the devil is the matter with the regiment, Sir?" Then, seeing from which quarter the grin originated—it had rippled along the line from left to right, like a wave breaking over the glassy surface of a calm lake—he spurred his charger, giving vent to exclamations far more forcible than polite. Meanwhile Captain X——, having joined his company, had drawn his sword and faced about. Then the mystery was solved; the whole inexplicable scene explained. X—— had completely shaved off beard, whiskers, and moustache. Now, as the regiment had been out at the Cape for some eighteen months or more, the gallant officer's forehead and every inch of the face left uncovered by hirsute adornment had been pretty deeply bronzed by the rays of King Sol. So, when he shaved completely, naturally the parts which had been covered by the beard appeared quite white. The effect was certainly not becoming; the gallant Captain resembled very closely a fine specimen of our primitive forefathers, the baboon. Scarlet in the face, with staring eyes, the Colonel reined in his steed, glared at his captain, and then deliberately took off his hat and threw it at the offending officer. Matters were growing serious. X—— sheathed his sword and demanded to be placed under arrest, and declared his determination that the affair should be brought before a court-martial.

"Very well, Sir; consider yourself under arrest; retire to your quarters, Sir," roared the now desperate chief, and, wheeling round, he gave certain necessary orders to the Adjutant. Captain X—— went back to his rooms, and had the mortification of having a sentry placed at his door. He was furious; events had been too much for him. To be called to task before the mess was bad enough, but to be publicly insulted and have a cocked hat shied at him—it was fearful! Yes, veritably, the service was going to the dogs; he would shake off his fetters and be free once more.

Meanwhile the Colonel cooled down; the Adjutant came and said the old man was sorry for what had passed, and that he, the Adjutant, felt certain that if a proper apology were made all would be forgotten and go well. The sentry was taken off; X—— told he was at liberty.

The first use he made of his liberty—such is the owl-like blindness of mankind—was to send in his papers, which he personally saw off by a mail sailing vessel. But the Colonel really was a kind-hearted man, he did all that a man in his position could do to smooth matters. The poor Adjutant had a hard time of it; he was continually going backwards and forwards as an unofficial *chargé d'affaires* from the “father of his regiment” to his sulky “child.” At length X—— repented. Apology was tendered, and right gladly accepted; and, moreover, the Colonel insisted on X—— leaving for England immediately, in order to intercept his papers. The necessary leave given, X—— started on his homeward voyage in a steamer bound for Portsmouth. Everything seemed to be going well, and X—— chukled at getting out of such a serious scrape so easily. But—there’s many a slip ‘twixt the oup and the lip!—the steamer’s shaft got out of gear when less than half the voyage had been accomplished, and they had to make the rest of the way by sailing. When they got to Portsmouth X——, by this time in a fine “fit of the blues,” posted up to London, only to find that the sailing vessel had arrived in the Thames long before, discharged all her cargo, and that his papers had been received at the Horse Guards and his resignation accepted. His money was lying for him at Cox’s, in Craig’s Court, and he no longer had the privilege of donning the Queen’s scarlet.

Thus ended the misadventure, a fearful warning to all future would-be practical jokers; and so ends my tale.

Lord George Hamilton may be confident that by "substituting improved for obsolete methods of administration," so as to successfully compete with other yards, he will have the support of the country.

H.M.S. *Fearless*, which is at present being fitted out by the Barrow Ship-building Company, is expected to be ready for active service about November next. She is the first of some torpedo-cruisers of a very formidable type which are being built for the navy. The speed expected by the Admiralty when the vessel was designed was sixteen and a half knots; but the builders are confident that a much higher rate of speed will be attained during the forthcoming trials. The gun-armament consists of four 5-in. B.L.R. guns, mounted on Vavasseur's central-pivoted carriages, eight Norden-

feldt machine-guns, and two Gardner guns. The torpedo armament consists of 11 torpedo-tubes, or air-guns, one fitted on the bow under water, and the others ranged along the upper deck. The *Fearless* being unarmoured, her safety as a war cruiser is secured by the engines, boilers, steering arrangements, magazines and other vital parts, being placed below the load water-line in water-tight compartments, with a protective steel deck fitted over them. She can be steered from three different places, and when in action all her men can be out of sight. The vessel is built of steel throughout, and particular care has been taken to combine strength with lightness.

At Sheerness some interesting experiments have taken place at the Garrison Point Fort with the new torpedo invented by Mr. Brennan; the results being very satisfactory. The experiments were conducted in conjunction with the electric search-light at the fort, and the torpedo was steered about the harbour, in different directions, at the will of the operator in the stronghold, and was finally directed at a target moored about a mile up the Medway, the mark being rendered discernible by means of the electric light. The torpedo is kept under control, and steered by means of a wire attached to the machinery in the torpedo-room of the fort. As it is proposed to test the adaptability of Mr. Brennan's torpedo for use as part of the armament of ships of war, I shall revert to the subject.

The following particulars regarding the fastest ironclads in the world have been published in an official paper:—*Italia* (Italian), 18 knots an hour; *Lepanto*, *Umberto*, *Sicilia*, and *Sardegna* (Italian), 17'50; *Warspite* (English), 17'20; *Imperieuse* (French), 17; *Ruggiero di Luarta*, *Morosini*, and *Andrea Doria* (Italian), 15'50; *Nile*, *Trafalgar*, *Sanpareil*, *Anson*, *Camperdown*, *Benbow*, *Rodney*, *Howe*, *Collingwood*, *Colossus*, and *Edinburgh* (English), 16; *Dullio* (Italian), 15'17; *Dandolo* (Italian), 15'20; *Devastation* (French), 15'17; *Alexandra* (English), 15.

From this table it will be seen that the Italian ironclads are the fastest in the world.

Some very important and interesting experiments were made at Portsmouth to determine the efficiency of the present system of firing ground mines. Six observation-mines of 500 lbs. of gun-cotton each were most successfully fired in nine or ten fathoms of water, and eleven counter-mines were then exploded with equal success.

"They are having a busy time of it at Aldershot; the great field-day was considered to be the most important that has been

held there for several years. The manoeuvres were chiefly with the object of making a practical inspection of the Royal Engineer troops and testing their efficiency. Lieutenant-General Nicholson, Inspector-General of Engineers, was present, and personally supervised the bridging operations, which were carried out in the most creditable manner. General Nicholson, on the conclusion of the operations, expressed the utmost satisfaction at the manner in which all the arrangements had been carried out, not only by the Engineers, but by the Infantry, who had proved their efficiency in shelter-trench drill.

The popular and witty Sir George Campbell is never idle, but I question if his last effort at the British Association is likely to meet with any more practical results than it did when propounded by Lord Bacon. The subject-matter of Sir George Campbell's address in the Anthropological Section was described by the speaker as practical rather than scientific anthropology—the study and cultivation of the creature man as he exists, rather than that branch of the subject which seeks to inquire into his origin and development. He recommended the systematic and scientific cultivation of what he called homiculture, in the same sense as "oyster culture," "bee culture," or "cattle culture," and that with a view both to physical and mental qualities. "It was very sad indeed, when so much had been done to improve and develop dogs, cattle, oysters, and cabbages, that nothing whatever had been done by man, who was left very much where he was when we had the first authentic records of him." This homiculture, or "man breeding," will, I fear, not be received by the populace at large with much favour.

The Haymarket Theatre—the real house of legitimate comedy—has once more asserted its claim to that position. The Vaughan-Conway Company have been playing nightly the *School for Scandal* to large and highly-appreciative audiences, so that it has not been necessary to change the programme; *au contraire*, such has been the demand to see Sheridan's masterpiece that matinées have also had to be given. It speaks much for the taste of the public to find that sound legitimate acting is as much appreciated as ever, and to be intellectually amused it is not necessary to call in the upholsterer or the aid of actors who, from some peculiar mannerism, are, by a portion of the public, regarded as clever. What has been offered by the Vaughan-Conway Company is good sound acting, while the portrayal of each character has stood on its own merits. Your mind is not distracted by tawdry furniture or the introduction of *objets d'art*, simple scenery forming the framework for the por-

traits presented. Miss Kate Vaughan's interpretation of Lady Teazle has given rise to much criticism. It is assumed, though the grounds on which the assumption is based have never been clearly set forth, that Lady Teazle, before her marriage, was a country girl, a hoyden in fact, so that after having married Sir Peter Teazle she should display the *gaucheries* of a country girl. This is an error. Having been well educated, with a woman's quick wit and aptitude she adapts herself at once, and naturally, to her husband's position. A born lady, brought up in the country, who has not hitherto been accustomed to London society, is not necessarily vulgar. If space permitted, we should like to follow Miss Vaughan critically through each act, as she has displayed a histrionic talent that superficial observers did not give her credit for. Terpsichore is replaced by Thalia:—

True ease in acting comes from art, not chance,
As those move easiest who have learnt to dance.

Miss Coleman plays Mrs. Candour remarkably well, and Miss Marie Illington, as Lady Sneerwell, shows this lady to possess the true vein of comedy. Miss Woolgar-Mellon played Maria with a charming *naïveté* of manner, and I sincerely hope she may, in time, attain the high position her mother did. There are still living those who remember Miss Woolgar's princeps in burlesques, her Lemuel in *Flowers of the Forest*, and her many other charming impersonations in the days of the old Adelphi Company. Mr. W. Farren's Sir Peter Teazle is simply inimitable, and Mr. Conway's Sir Charles Surface is excellent throughout; his spirits never flag, his acting in the screen-scene was in the vein of true comedy, and nothing could have been more genial than his manner when selling the family pictures but refusing to part with that of his uncle, dear old Noll. Mr. Forbes Dawson's Joseph Surface was a careful and well-sustained piece of acting. The other characters were well acted, and the performance was a decidedly spirited one.

Many readers of this paper will regret to learn of the death of Captain George Goddard, a very popular member of society. In 1870 Captain Goddard laid the foundation of the Coaching Club, which, on its first appearance in Hyde Park, turned out twenty-two drags. Captain Goddard was an exceedingly kind-hearted and generous man, an excellent *raconteur*, and a host in himself. At the Raleigh, Pratt's, and many other clubs, "George" will long be missed by the large circle of friends he has left behind to mourn his loss.

The sudden disappearance of the West India Band from the Colonial and Indian Exhibition has given rise to much surmise.

Certainly it is not going too far to say that the band was one of the chief attractions of the gardens, and our country cousins were surprised and delighted to find so much intelligence in a coloured race, while their picturesque Zouave costume had an exceedingly pretty effect. By some it is supposed the expense was too much, but this is absurd. Strauss' Band last year cost more, remained longer, and there were scarcely half the number of visitors. By others it has been attributed to some cause of jealousy. Be this how it may, all regret their departure, and they carry with them the best wishes of old England. While here, the conduct of the bandmen was most exemplary, and they sustained, with credit, the honour of their regiment. They were treated hospitably by all; Mr. C. Washington Eves, the Honorary Commissioner for Jamaica, was their staunch friend throughout. On their arrival he gave them a dinner at the Exhibition, has engaged one of them, who had just completed his term of service, to attend in the Jamaica Court, and on Friday, September 11th, he attended the funeral of Private Clarke, a member of the band of the 1st West India Regiment, and sent a magnificent wreath. Such kindly acts will be duly appreciated by the service.

An excellent and most useful company has been started under the name of the "Tower" Furnishing and Finance Company. Officers of limited means, and other people, can have a house furnished and pay for the same by easy instalments. The goods are selected from a wholesale manufacturing firm, of which there are 100 to choose from, and the business is arranged with privacy and despatch. The advantages the "Tower Company" offer are far greater than any other furnishing company I have met with.

"FURLOUGH."

Reviews.

A BIRD'S-EYE VIEW OF OUR CIVIL WAR. By T. A. DODGE.
Boston, U.S.: Messrs. J. R. Osgood & Co.

Dodge's *Bird's Eye View of the Civil War* in America is one of those useful compilations that are always appreciated in a military library. The author has applied himself to the task of giving a clear and accurate history of the whole war without colouring or embellishment, and, discarding also pictorial illustrations, has provided the reader with forty-one page maps, and four special ones folded at the end of the volume. In a modest dedication to his son he disclaims any desire to be "original"; but we can say with truth that anyone who has been bewildered by partizan accounts of the great war will find very exemplary originality in this honest, painstaking, and objective history of the struggle. It is a book that, in consequence, can be not only recommended for its own sake, as being one of the best descriptions of the war we have seen, but as also affording an example of the kind of solid histories of great wars which we should like to see written more frequently by our own officers.

INDIA REVISITED. By EDWIN ARNOLD. London: Messrs. Trübner & Co.

Perhaps the most popular book of travels of the season has been Edwin Arnold's account of his recent visit to India. So many books are written on that country that the subject is apt to pall; but in the glowing pages of the author of the *Light of Asia* India reappears in a form calculated to fascinate and charm, and create quite a fresh conception of our great Asiatic Empire. The chapter on the "Camp of Exercise at Delhi" will at once attract the military reader, and there will be few who will disagree with Mr. Arnold's opinion that "it was painful to note how great was the lack of

English officers with the native regiments." Little reforms of such defects are infinitely more imperative than wordy Ilbert Bills, and we are glad that Mr. Arnold should have had the courage to expose them.

DISENCHANTMENT. By Miss F. MABEL ROBINSON. London : Messrs. Vizetelly & Co.

The latest addition to the entertaining and handsome one-volume novels of Messrs. Vizetelly is an "everyday story," by the author of *Mrs. Butler's Ward*. It is a clever and pathetic story, well adapted for seaside reading, and is told in a singularly unaffected yet vigorous and masterly manner, giving evidence of the skill of the born novelist. Mabel Robinson achieved a striking success with her first work, but we prognosticate for the second a still greater triumph, and trust that it will encourage her to further efforts in the paths of fiction.

TO CORRESPONDENTS.

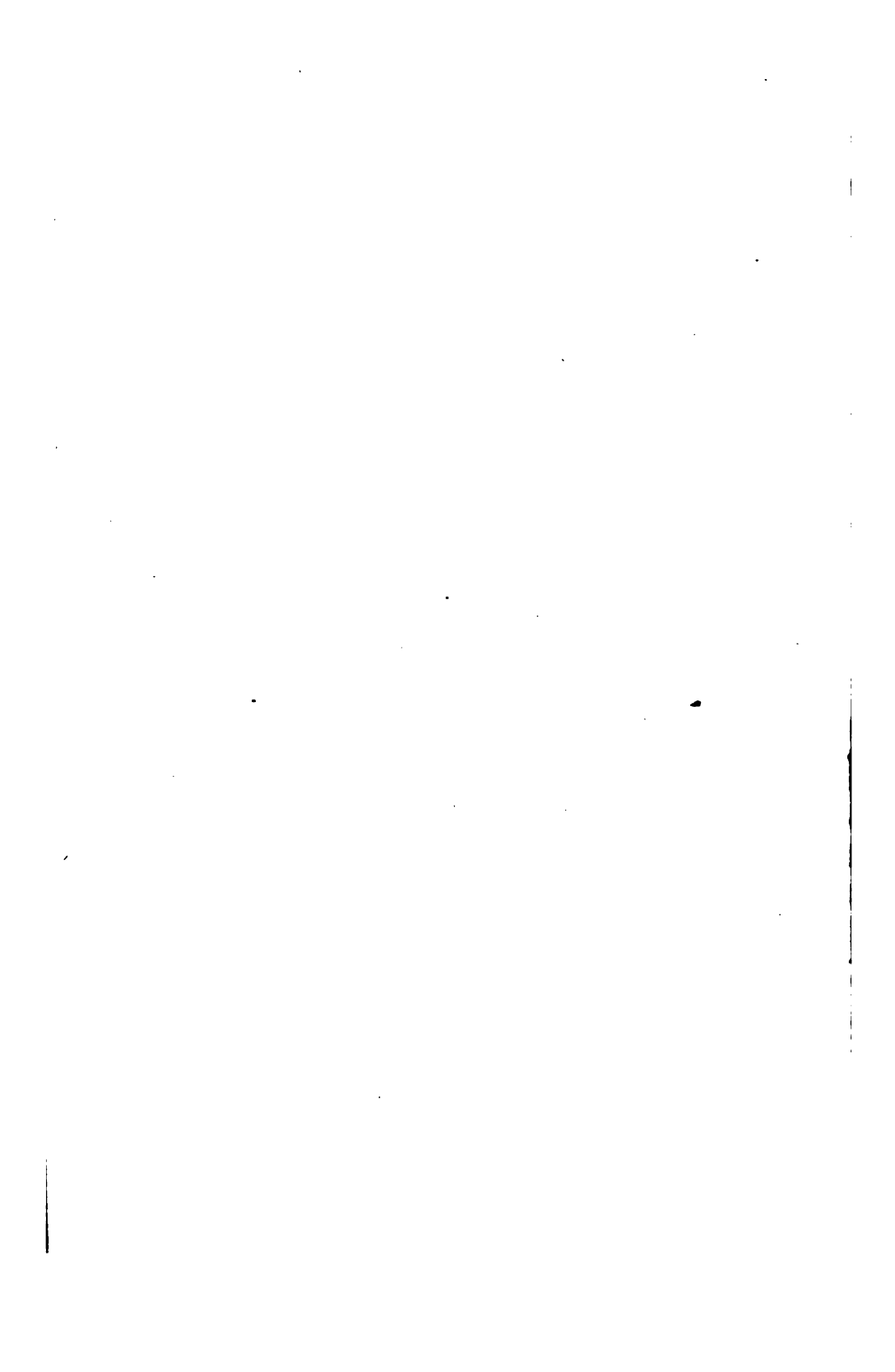
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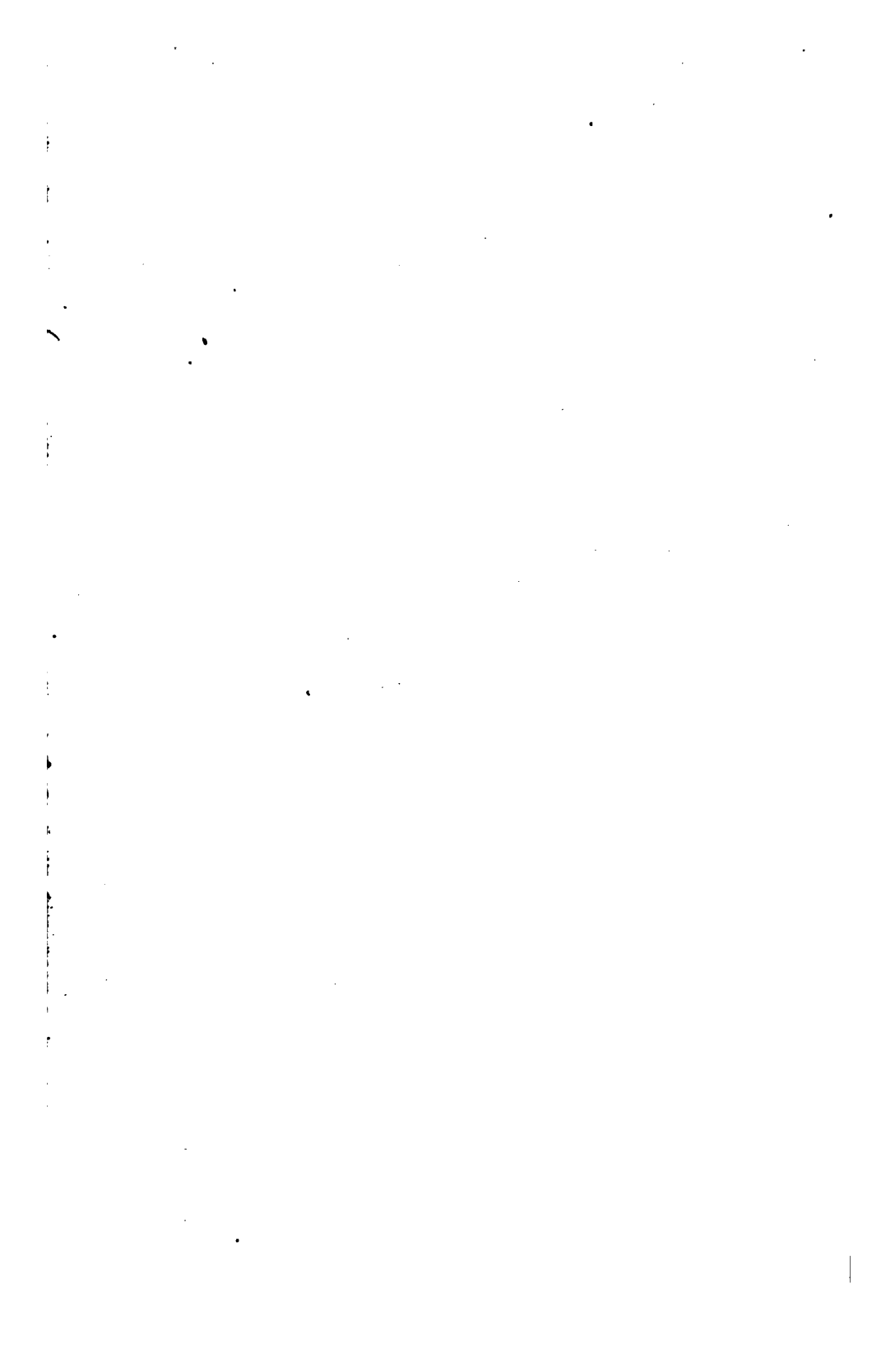
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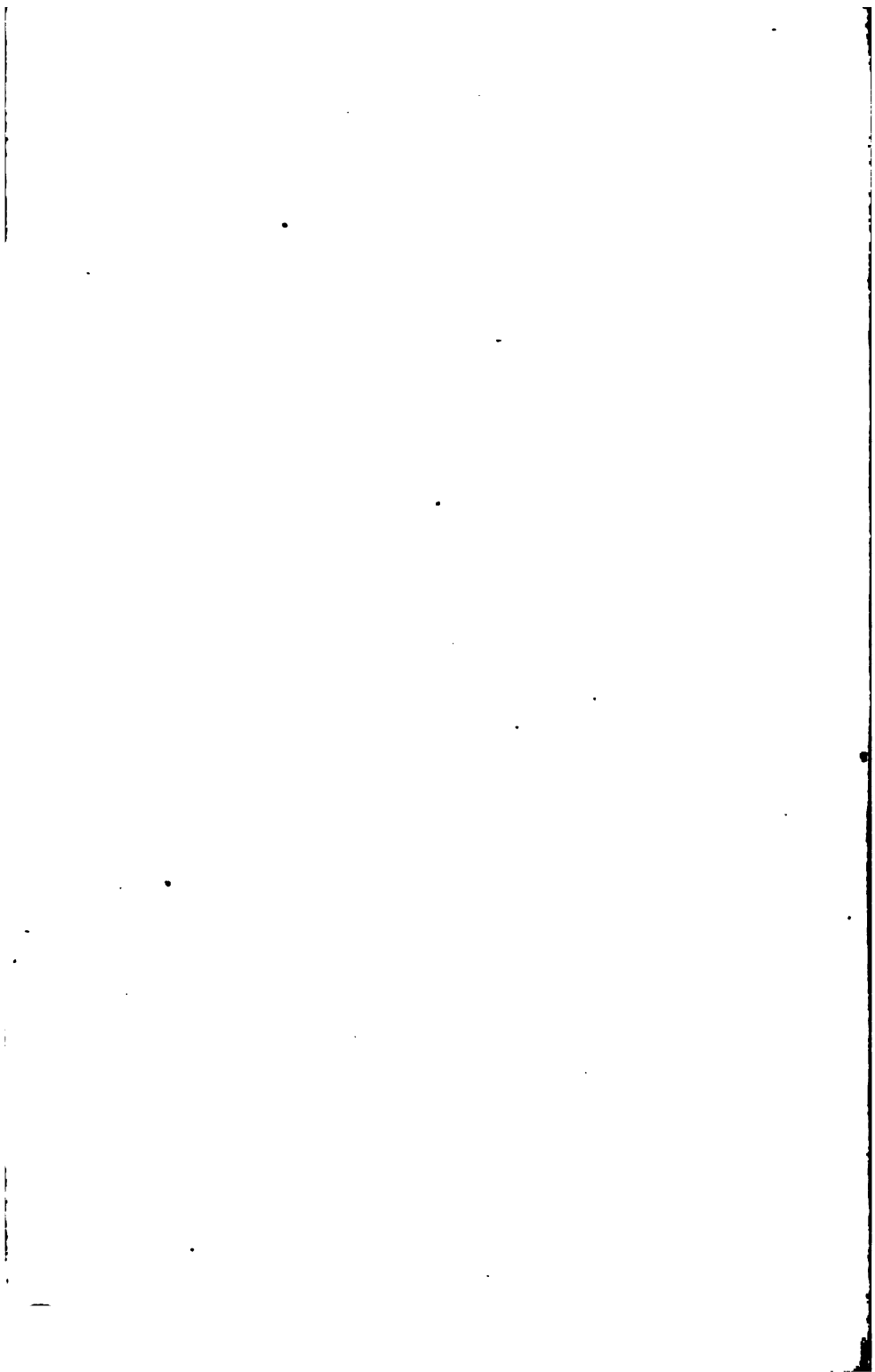
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Reviews of Books and Notes on salient matters connected with the Army and Navy will be continued each month.









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